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aSB763.C2F45

Forest Service
Forest Pest
Management



Abraham *1/8*

PRELIMINARY DATA REPORT - DAVIS AIRCRAFT SPRAY CHARACTERIZATION TRIALS

*Return to Jack Barry -
May 7, 1991*

March 88
FPM 88-6

Pesticide Precautionary Statement

Pesticides used improperly can be injurious to humans, animals, and plants. Follow the directions and heed all precautions on the labels.

Store pesticides in original containers under lock and key--out of the reach of children and animals--and away from food and feed.

Apply pesticides so that they do not endanger humans, livestock, crops, beneficial insects, fish, and wildlife. Do not apply pesticides when there is danger of drift, when honey bees or other pollinating insects are visiting plants, or in ways that may contaminate water or leave illegal residues.

Avoid prolonged inhalation of pesticide sprays or dusts; wear protective clothing and equipment if specified on the container.

If your hands become contaminated with a pesticide, do not eat or drink until you have washed. In case a pesticide is swallowed or gets in the eyes, follow the first-aid treatment given on the label, and get prompt medical attention. If a pesticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

Do not clean spray equipment or dump excess spray material near ponds, streams, or wells. Because it is difficult to remove all traces of herbicides from equipment, do not use the same equipment for insecticides or fungicides that you use for herbicides.

Dispose of empty pesticide containers promptly. Have them buried at a sanitary land-fill dump, or crush and bury them in a level, isolated place.

NOTE: Some States have restrictions on the use of certain pesticides. Check your State and local regulations. Also, because registrations of pesticides are under constant review by the Federal Environmental Protection Agency, consult your county agricultural agent or State extension specialist to be sure the intended use is still registered.

The use of trade, firm, or corporation names is for the information and convenience of the reader. Such use does not constitute an official evaluation, conclusion, recommendation, endorsement, or approval of any product or service to the exclusion of others which may be suitable.

CAUTION: Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife--if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

FPM 88-6

PREFACE

PRELIMINARY DATA REPORT -
DAVIS AIRCRAFT SPRAY
CHARACTERIZATION TRIALS

This is a preliminary data report on the results of the Davis Aircraft Spray Characterization Trials conducted in 1988. It is emphasized that these data are to be considered preliminary. A more detailed report with additional data and analyses will be forthcoming. This report includes only results of the ground detection sampling. No conclusions are presented at this time.

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March 1988

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PREFACE

This is a preliminary data report of the aircraft spray characterization trials conducted near Davis, CA, 14-19 March 1988. It is emphasized that these data are to be considered preliminary. A more detailed report with additional data and analyses will be forthcoming. This report includes only results of the ground deposition sampling. No conclusions are presented at this time.

Formulation was provided by the manufacturer and aircraft were contracted by FS. Field assistance was provided by personnel from Abbott Laboratories, Gordon Crop Protection, and FS. Field trials and data analysis were conducted by FS.

Table 1 below summarizes the combination of variables evaluated.

Table 1 - Trial Summary

	Formulation	Number of Trials	Aircraft	Atomizer
1.	Dipel 4L	4	Air Tractor 301	Microair
		2	Bell 205A-1	Microair
		4	Bell 205A-1	Microair
2.	Dipel 6AF	7	Bell 205A-1	Microair
		3	Bell 205A-1	Microair
		4	Air Tractor 301	Microair
3.	Thuricide 98LV	5	Bell 205A-1	Microair
		2	Air Tractor 301	Microair
4.	Thuricide 98LV	2	Bell 205A-1	Microair
		7	Air Tractor 301	Microair

INTRODUCTION

A total of 44 aircraft spray characterization data trials were conducted at Growers Air Service, Woodland, CA, 14-19 March 1988. The purpose of the trials was to observe the atomization of four undiluted formulations in preparation for the USDA Forest Service (FS) 1988 operational program to control western spruce budworm in Oregon. Specifically there was a need to identify any potential problems in the spraying and atomization of the formulations.

Formulation was provided by the manufacturers and aircraft were contracted by FS. Field assistance was provided by personnel from Abbott Laboratories, Sandoz Crop Protection, and FS. Field trials and data analyses were conducted by FS.

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Table 1 - Trial Summary

	<u>Formulation</u>	<u>Number of Trials</u>	<u>Aircraft</u>	<u>Atomizer</u>
1.	Dipel 6L	6 3 4	Air Tractor 301 Bell 205A-1 Bell 205A-1	Micronair Beecomist Micronair
2.	Dipel 6AF	7 3 4	Bell 205A-1 Bell 205A-1 Air Tractor 301	Micronair Beecomist Micronair
3.	Thuricide 48LV	5 3	Bell 205A-1 Air Tractor 301	Beecomist Micronair
4.	Thuricide 32LV	2 7	Bell 205A-1 Air Tractor 301	Beecomist Micronair

METHOD

A west to east spray deposit sampling line was established in a field that had been recently plowed and furrowed. Kromekote samplers were placed at 10-foot intervals along the 500-foot line. Each of the 50 positions contained a Kromekote card positioned horizontally on the ground and a 2 1/4" x 8 3/16" Kromekote strip placed over a 2" x 2" stake. The strip was secured over the 2" high stake top with two equal surface areas on the north and south side of the stake. Additionally Douglas-fir foliage was secured to the top of 12" stakes at positions 10, 15, 20, 25, 30, 35, and 40. Only the ground deposit data are presented in this report.

On each trial the aircraft flew over the mid-section of the cardline into the wind (Figure 1). The aircraft was off-set west or east of center to allow for variation in wind direction. This helped to insure (in most cases) that the spray swath was contained within the cardline. The aircraft sprayed a distance of approximately 0.6 miles on each trial.

Weather was measured with instruments available in the FS fire belt weather kit. Recordings were made at the west end of the card line at the 2-meter level. Most of the surface winds were NW or SW and perpendicular to the card line. Under variable and very light winds (<2 mph) the directions tended to blow parallel to the card line. These conditions are noted in the trial summary data, Tables 2 - 10.

Spray deposit cards were assessed by four detailers from Eldorado NF and one from Nez Perce NF.

Operationally wind speed measurements are obtained in forest openings at about 2 meters above ground. Winds above forest canopies can be greater than 10 mph while less than 1 mph at the 2-meter level in the forest.

Wind speeds measured at the 2-meter level in the center of a 40-acre opening would be correspondingly 10 mph above the canopy. It is important to bear in mind that aerial spray operations often are conducted when wind speeds are 10 mph. Experimental data has shown that winds increase deposition and impaction of spray on foliage. Winds increase turbulence at canopy tops and provide energy for impaction.

Spraying under higher winds is especially important in ULV spraying. The small drops impact well if propelled by wind and turbulence. On the other hand lacking these forces they tend to meander around instead of impacting on objects.

In the conduct of airport or aircraft spray characterization trials the aim is to collect spray drops that under operational conditions would be presented to top of the canopy. Therefore the ground-based spray deposit card line represents a sampling

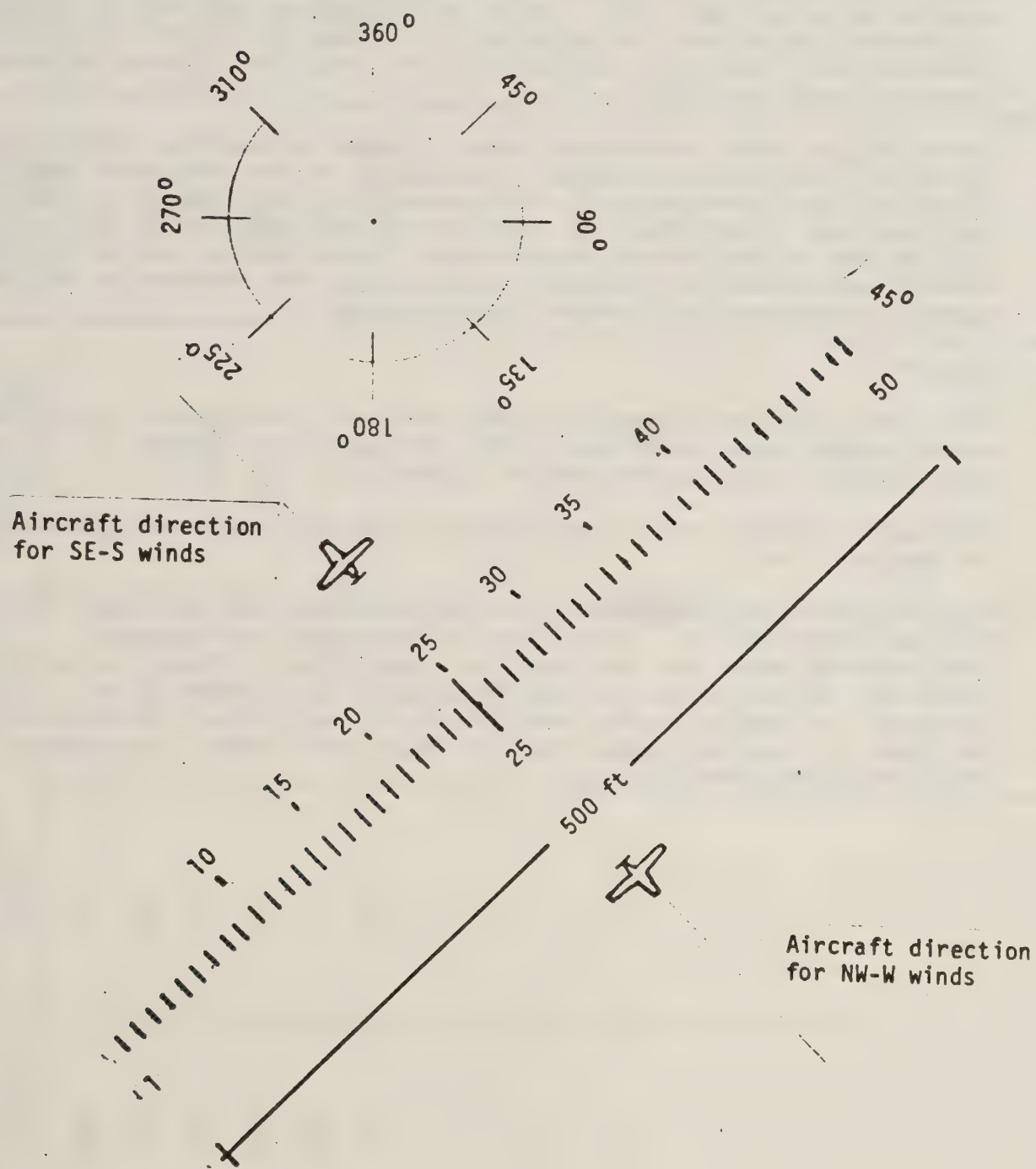


Figure 1 - Card line samplers at every 10 feet numbered 1-50. Foliage sample at positions 10, 15, 20, 25, 30, 35, and 40.

line stretched across canopy top. As discussed previously above, a 10 mph wind 2 meters above the card line would equate to a 2 mph wind in a forest opening and an 18 mph wind would equate to a 3.6 mph wind. This again points out the difference in conducting airport trials for ULV compared to LV and HV. The premise that low wind conditions are ideal for LV and HV simply does not hold for ULV.

These trials were conducted over a range of weather conditions, by choice and not by design. Typically there are less than two hours of spray weather in the morning and less than one hour in the evening. Therefore we took every opportunity to conduct trials and to replicate conditions. Data over a range of conditions should be helpful in planning and conducting aerial spray operations with these formulations.

RESULTS

Data are provided on swath width and mean drop count along the swath width using a criteria of ≥ 10 drops per square centimeters; and volume median diameter.

The swath width, mean drop deposit, and VMD data are presented in Tables 2-10.

Deposition along the card line is presented in bar graph labeled Trials 1 through 45. Drop counts < 10 drops per square centimeters were not included in these data. There is no bar graph for Trial 41 as it was considered a no data trial. Neither are there graphs for Trials 17 and 18 as the deposition on these trials was less than 10 drops per square centimeter at each sampling position.

TABLE - 2 Dipel 6L, Air Tractor 301, Micronair

Trial	Wind Speed (MPH)	Wind Direction (°)	Temperature (°F)	Relative Humidity (%)	Swath Width (ft) Greater Than 10 Drops/CM ²	Mean Drops/CM ² Along Swath	Estimated VMD (µm)
1	10-12	300	44	78	170	22	68
2	15-18	320	46	76	110	25	114
3	18	320	52	67	140	20	151
5	7-10	320	62	20	210	28	
6	8	280	55	34	290	18	121
7	5-6	310	56	46	200	14	151

TABLE - 3 Dipel 6L, Bell 205 A1, Beecomist

Trial	Wind Speed (MPH)	Wind Direction (°)	Temperature (°F)	Relative Humidity (%)	Swath Width (ft) Greater Than 10 Drops/CM ²	Mean Drops/CM ² Along Swath	Estimated VMD (μm)
38	1-2	120	70	37	230	16	159
39	<1	120	68	42	220	25	148
40	<1	120	65	48	200	32	102

TABLE - 4 Dipel 6L, Bell 205 AL, Micronair

Trial	Wind Speed (MPH)	Wind Direction (°)	Temperature (°F)	Relative Humidity (%)	Swath Width (ft) Greater Than 10 Drops/CM ²	Mean Drops/CM ² Along Swath	Estimated VMD (µm)
42	<2	NW	47	79	240	37	125
43	2-3	310	47	79	260	26	114
44	6	320	53	75	150	21	125
45	6	320	55	70	290	19	136

TABLE - 5 Dipel 6AF, Bell 205A1, Beecomist

Trial	Wind Speed (MPH)	Wind Direction (°)	Temperature (°F)	Relative Humidity (%)	Swath Width (ft) Greater Than 10 Drops/cm ²	Mean Drops/cm ² Along Swath	Estimated VMD (µm)
4	12	320	65	27	10	16	91
8	1-2	320	40	44	260	15	57
9	3	280	37	90	210	16	114
10	2-3	310	42	53	120	19	91

TABLE - 6 Dipel 6AF, Air Tractor, Micronair

Trial	Wind Speed (MPH)	Wind Direction (°)	Temperature (°F)	Relative Humidity (%)	Swath Width (ft) Greater Than 10 Drops/CM ²	Mean Drops/CM ² Along Swath	Estimated VMD (μm)
11	4-5	280	46	52	90	20	57
12	6-8	310	55	33	140	20	57
13*	10	320	54	38	60	12	68
14*	6-8	340	55	38	120	14	80
15	2-3	280	65	39	40	16	80
16	2-3	280	64	36	90	13	68
34	6	320	50	74	290	20	91
35*	4	320	52	63	490	29	91
36	4-5	320	55	65	450	16	91
37	5	310	57	62	210	19	57

*Release height 100 feet.

TABLE - 7 Thuricide 48LV, Bell 205A1, Beecomist

Trial	Wind Speed (MPH)	Wind Direction (°)	Temperature (°F)	Relative Humidity (%)	Swath Width (ft) Greater Than 10 Drops/CM ²	Mean Drops/CM ² Along Swath	Estimated VMD (µm)
17	<2	300	64	36	0	<10	80
18	<2	300	63	33	0	<10	91
19	2-3	310	37	82	170	15	102
20	1-2	var	39	58	130	13	125
21	1-2	var	48	52	310	22	102

TABLE - 8 Thuricide 48LV, Air Tractor 301, Micronair

Trial	Wind Speed (MPH)	Wind Direction (°)	Temperature (°F)	Relative Humidity (%)	Swath Width (ft) Greater Than 10 Drops/CM ²	Mean Drops/CM ² Along Swath	Estimated VMD (μm)
22	1-2	-	42	68	210	46	102
23	2-3	-	47	66	210	34	91
24	3-4	65	49	61	30	11	114

Trial	Wind Speed (MPH)	Wind Direction (°)	Temperature (°F)	Relative Humidity (%)	Swath Width (ft) Greater Than 10 Drops/CM ²	Mean Drops/CM ² Along Swath	Estimated VMD (μm)
25	4-5	50	53	74	240	22	148
26	3-4	SE	55	72	380	29	205

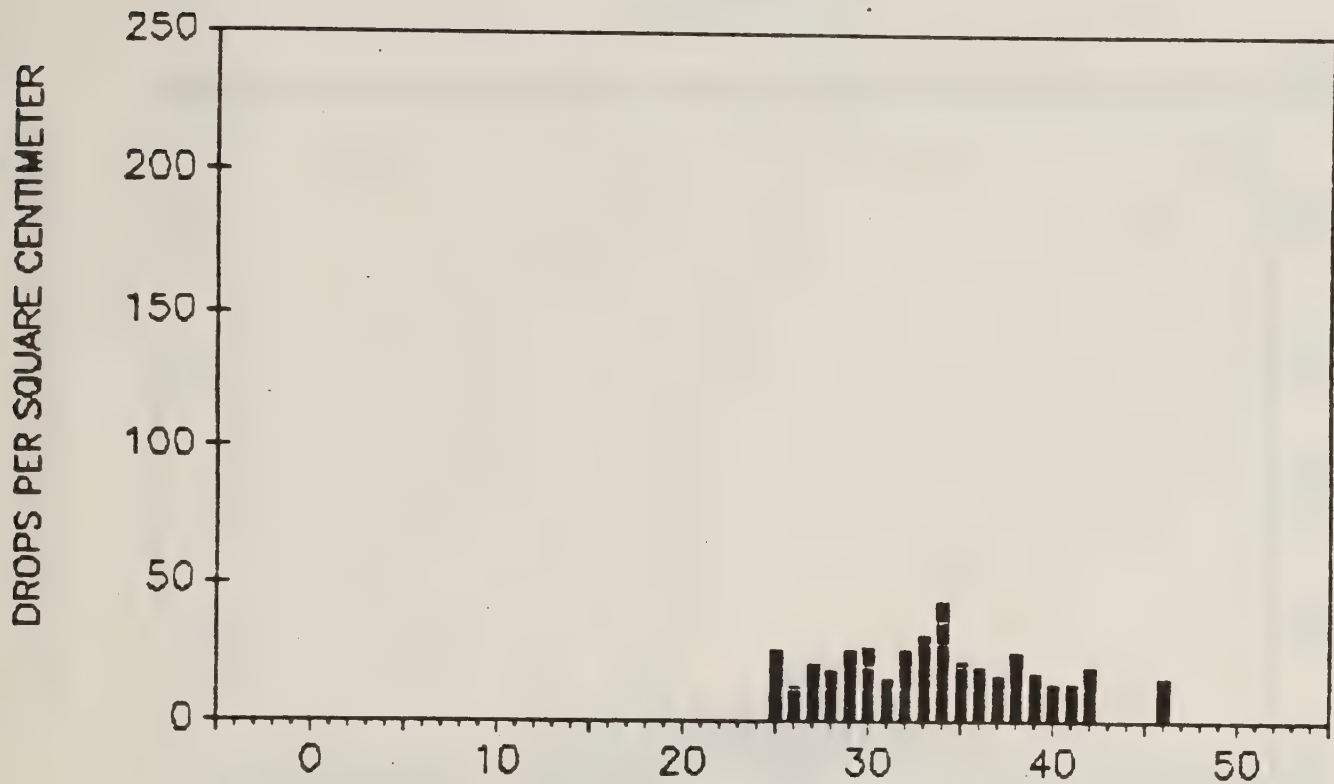
TABLE - 10 Thuricide 32LV, Air Tractor 301, Micronair

Trial	Wind Speed (MPH)	Wind Direction (°)	Temperature (°F)	Relative Humidity (%)	Swath Width (ft) Greater Than 10 Drops/CM ²	Mean Drops/CM ² Along Swath	Estimated VMD (μm)
27	2-4	SE	56	65	90	17	120
28	5	140	66	48	60	72	142
29	4	130	65	48	160	39	80
30	5	140	63	41	200	95	68
31	3-5	320	41	84	320	78	91
32	6	330	38	85	240	46	125
33	6	320	44	82	230	59	68

DIPEL 6L
AIR TRACTOR AT-301
MICRONAIR AU4000

GROUND DEPOSITION ON CARDLINE

TRIAL 1

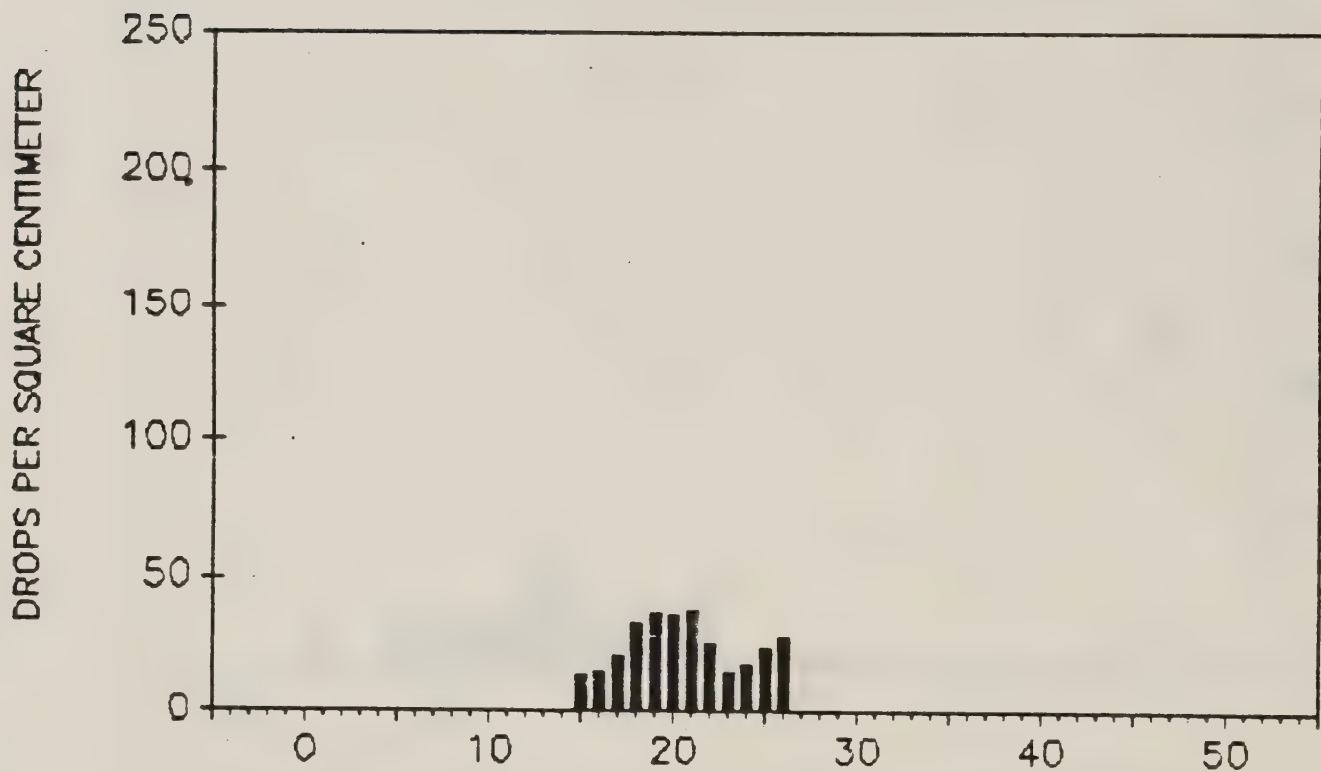


500 FT CARDLINE — 50 SAMPLERS — 10 FT SPACING

Dipel 6L
Air Tractor AT-301
Micronair AU4000
Wind Speed - 10-12 MPH
Wind Direction - 300°
Temperature - 44° F
RH - 78%

GROUND DEPOSITION ON CARDLINE

TRIAL 2

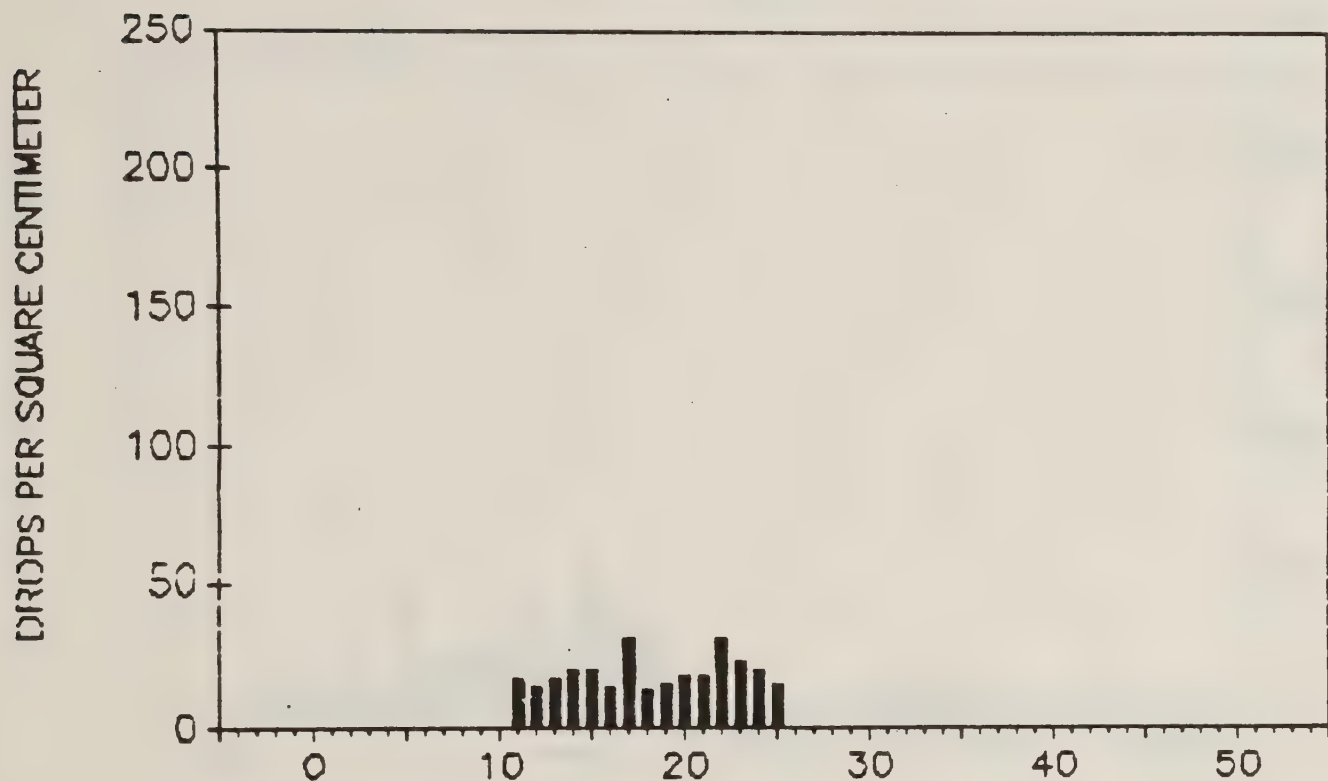


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6L
Air Tractor AT-301
Micronair AU4000
Wind Speed - 15-18 MPH
Wind Direction - 320°
Temperature - 46° F
RH - 76%

GROUND DEPOSITION ON CARDLINE

TRIAL 3

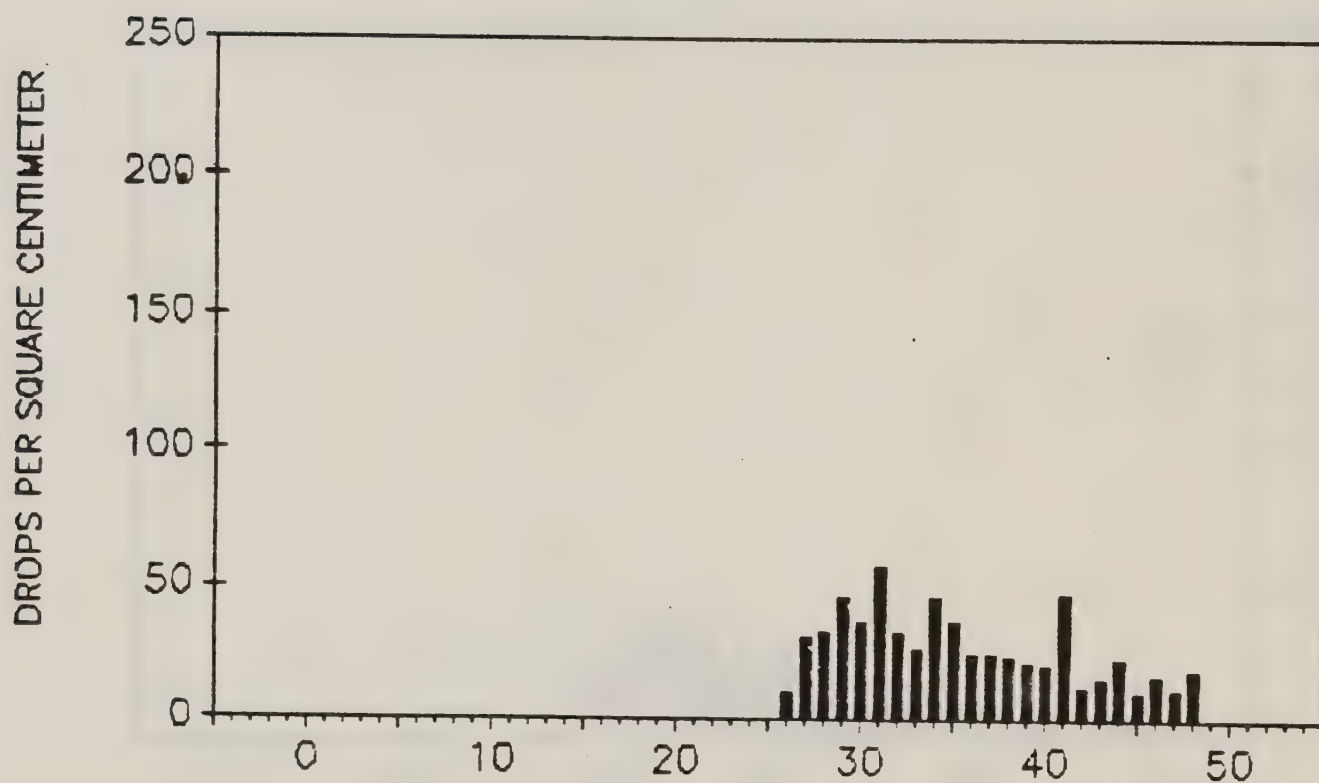


500 FT CARDLINE — 50 SAMPLERS — 10 FT SPACING

Dipel 6L
Air Tractor AT-301
Micronair AU4000
Wind Speed - 18 MPH w/gusts
Wind Direction - 320°
Temperature - 52° F
RH - 67%

GROUND DEPOSITION ON CARDLINE

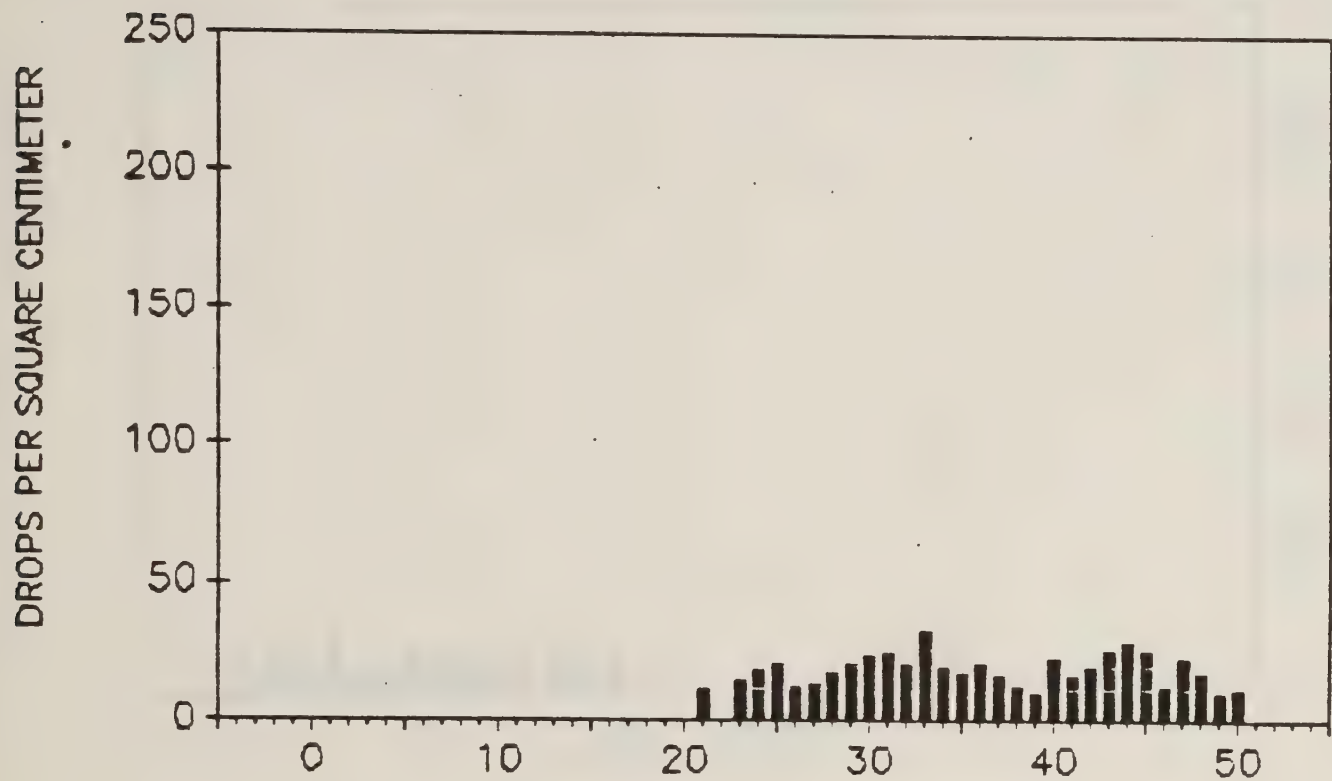
TRIAL 5



Dipel 6L
Air Tractor AT-301
Micronair AU4000
Wind Speed - 7-10 MPH
Wind Direction - 320°
Temperature - 62° F
RH - 20%

GROUND DEPOSITION ON CARDLINE

TRIAL 6

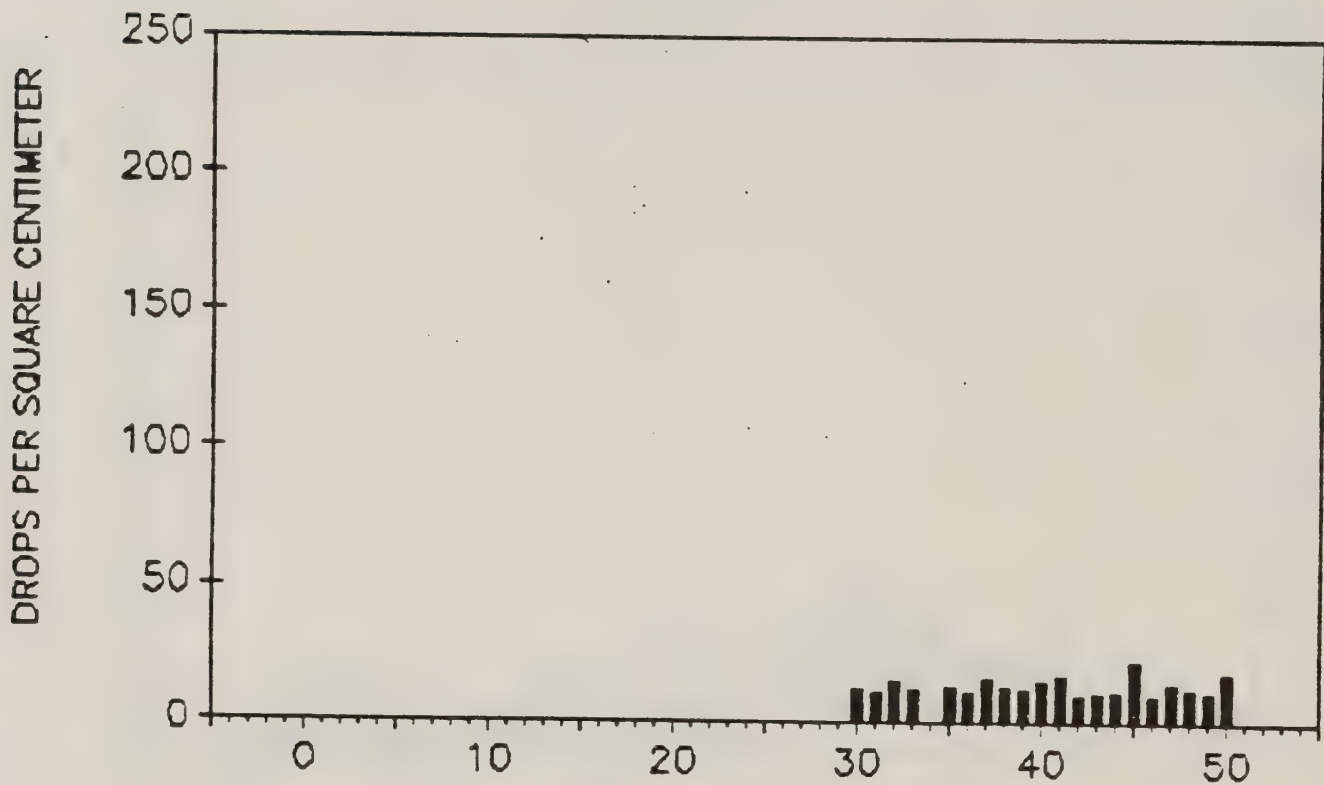


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6L
Air Tractor AT-301
Micronair AU4000
Wind Speed - 8 MPH
Wind Direction - 280°
Temperature - 55° F
RH 34%

GROUND DEPOSITION ON CARDLINE

TRIAL 7



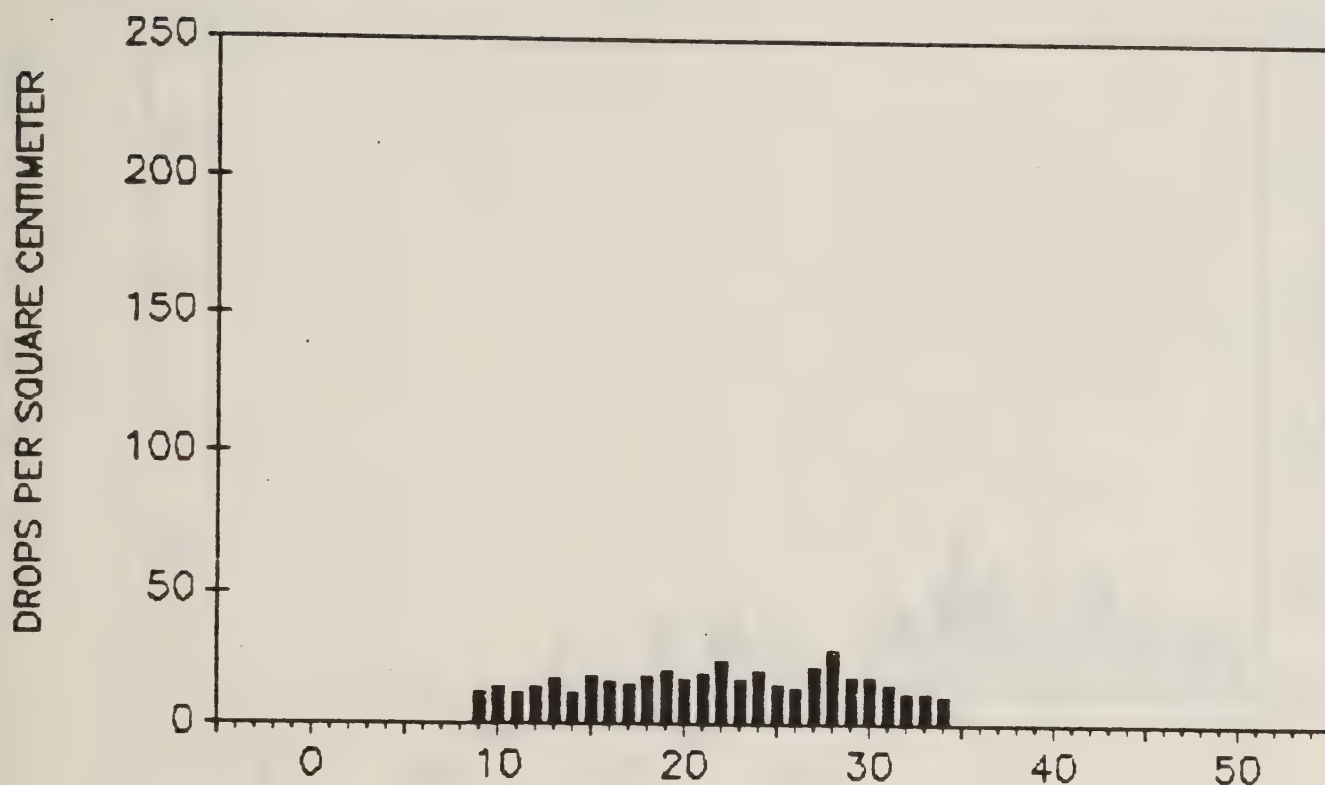
500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6L
Air Tractor AT-301
Micronair AU4000
Wind Speed - 5-6 MPH
Wind Direction - 310°
Temperature / 56°
RH - 46%

DIPEL 6L
BELL 205A-1
BEECOMIST

GROUND DEPOSITION ON CARDLINE

TRIAL 38

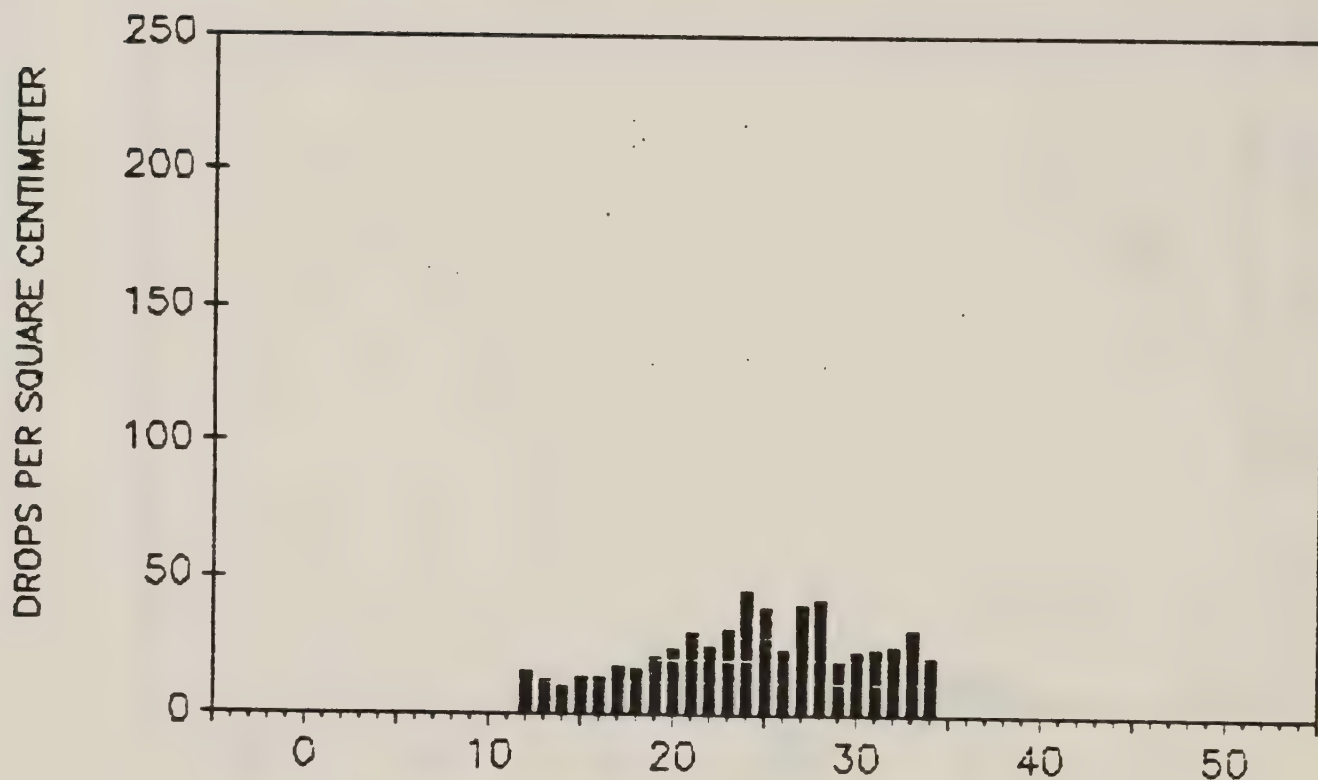


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6L
Bell 205A-1
Beecomist
Wind Speed - 1-2 MPH
Wind Direction - 120°
Temperature - 70°
RH - 37%

GROUND DEPOSITION ON CARDLINE

TRIAL 39

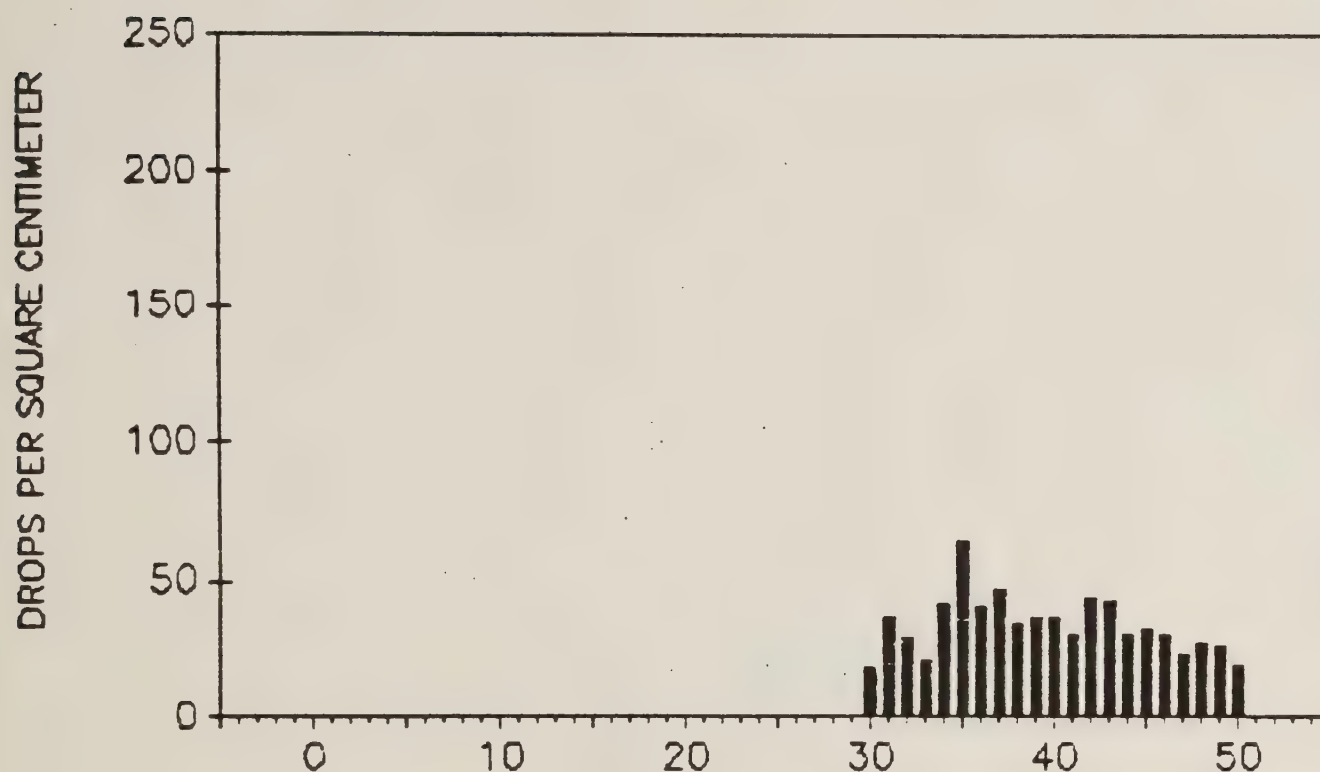


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6L
Bell 205A-1
Beecomist
Wind Speed - less than 1 MPH
Wind Direction - 120°
Temperature - 68° F
RH - 42%

GROUND DEPOSITION ON CARDLINE

TRIAL 40



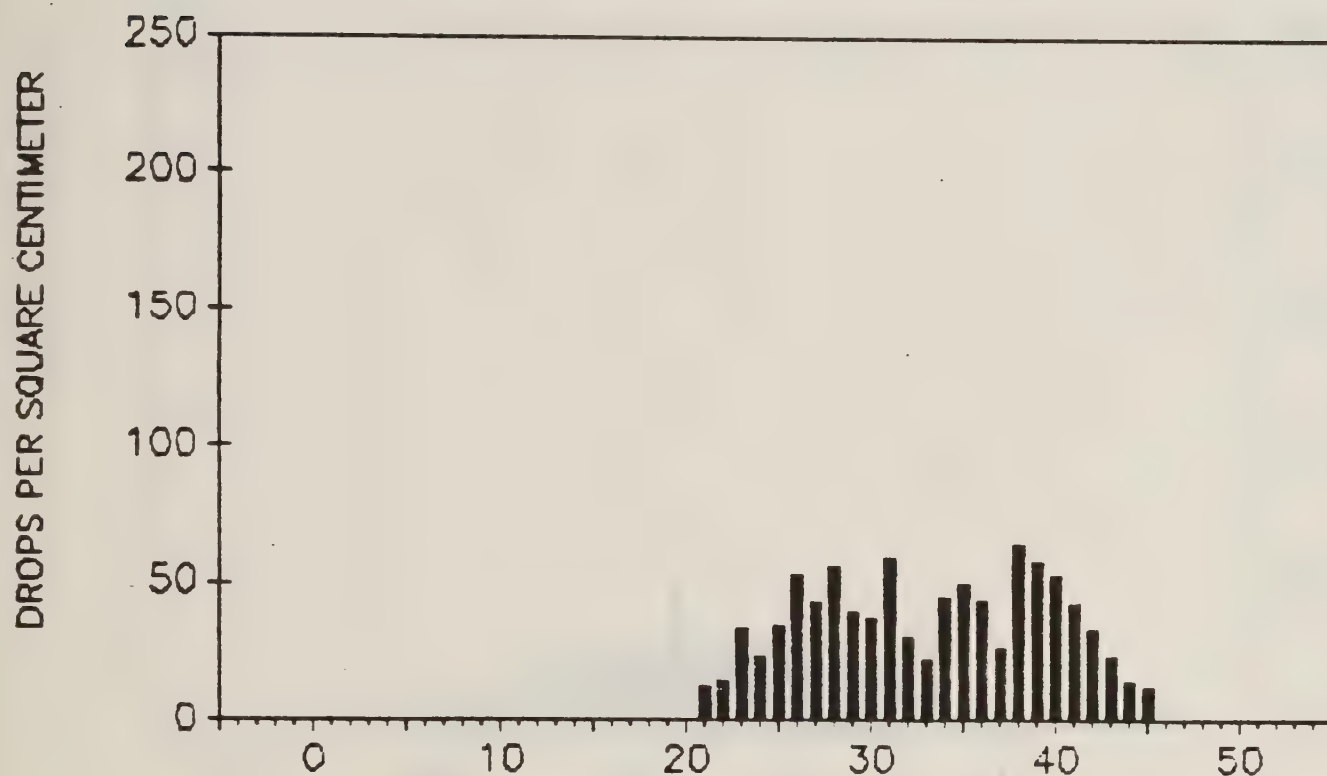
500 FT CARDLINE — 50 SAMPLERS — 10 FT SPACING

Dipel 6L
Bell 205A-1
Beecomist
Wind Speed - less than 1 MPH
Wind Direction - 120°
Temperature - 65° F
RH - 48%

DIPEL 6L
BELL 205A-1
MICRONAIR AU5000

GROUND DEPOSITION ON CARDLINE

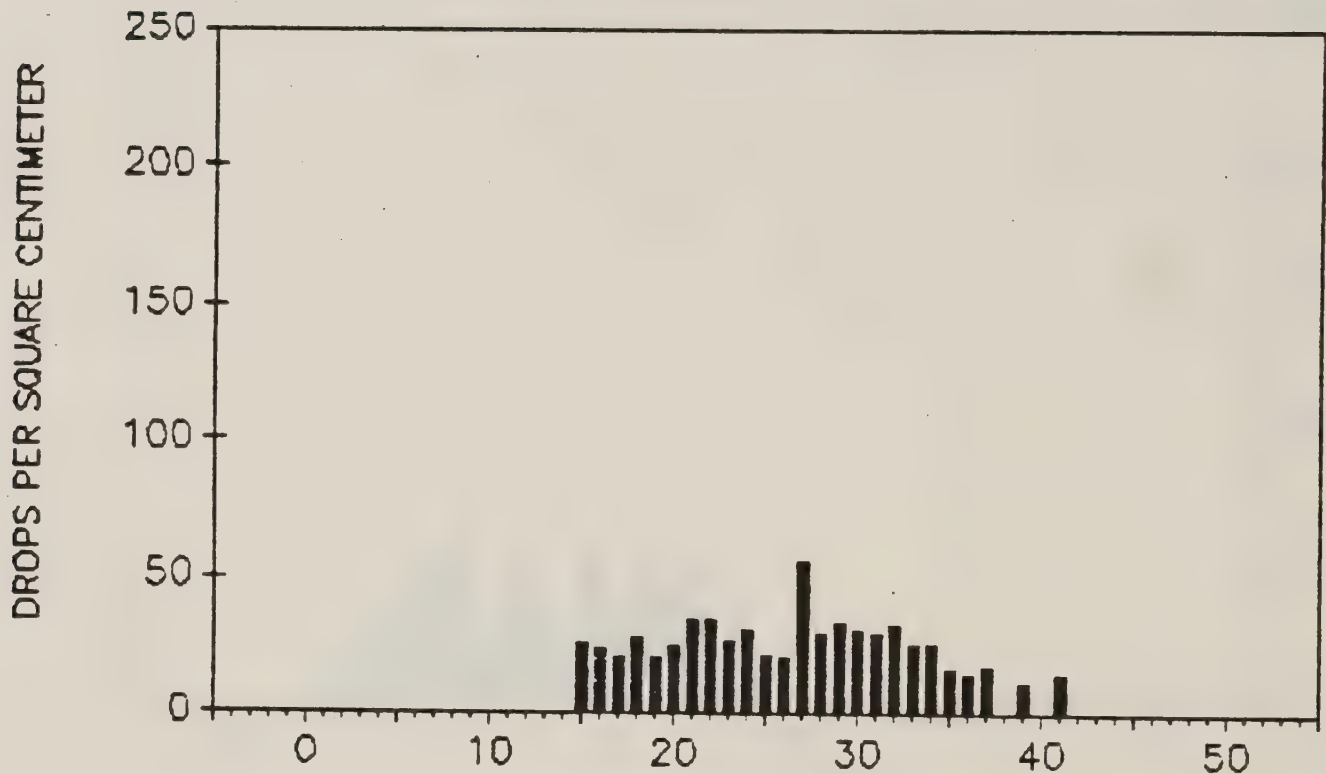
TRIAL 42



Dipel 6L
Bell 205A-1
Micronair AU5000
Wind Speed - less than 2 MPH
Wind Direction - Variable (NW)
Temperature - 47° F
RH - 79%

GROUND DEPOSITION ON CARDLINE

TRIAL 43

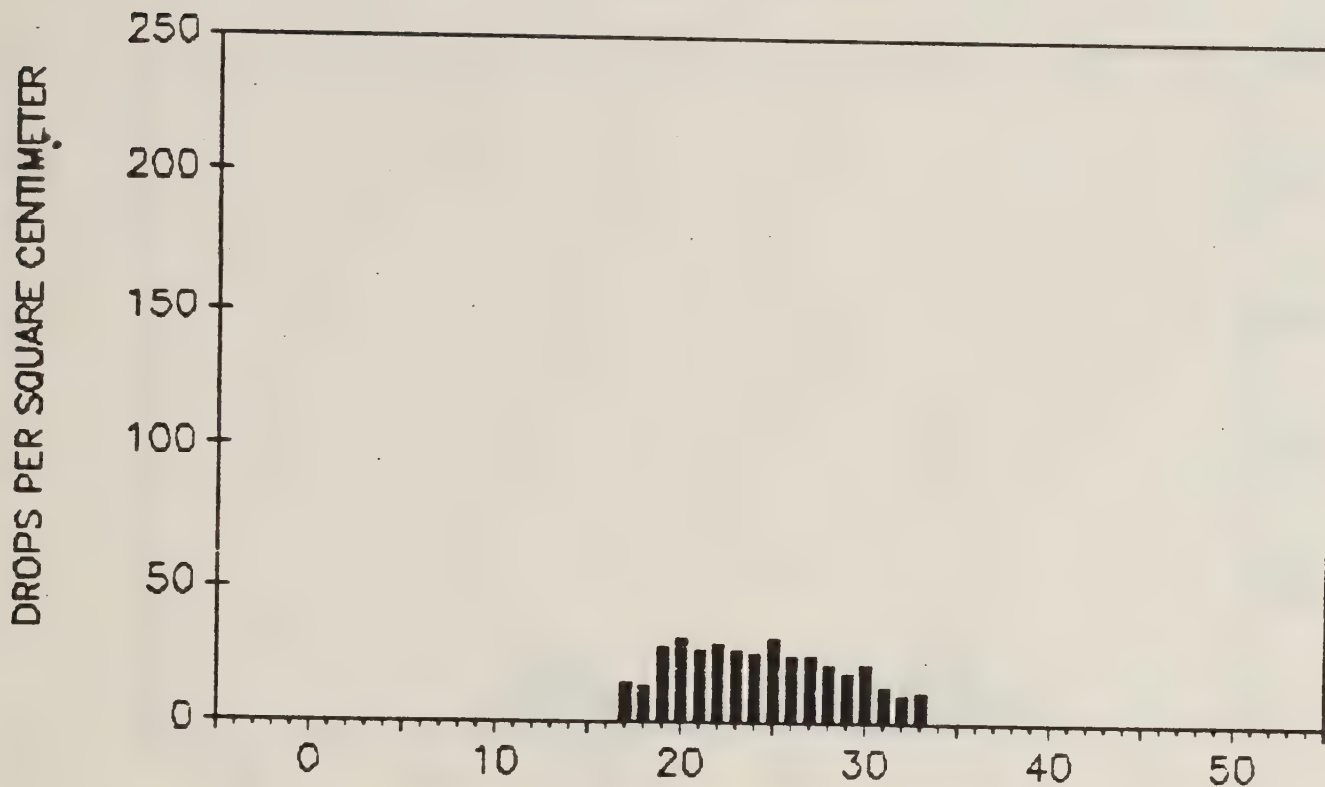


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6L
Bell 205A-1
Micronair AU5000
Wind Speed - 2-3 MPH
Wind Direction - 310°
Temperature - 47° F
RH - 79%

GROUND DEPOSITION ON CARDLINE

TRIAL 44

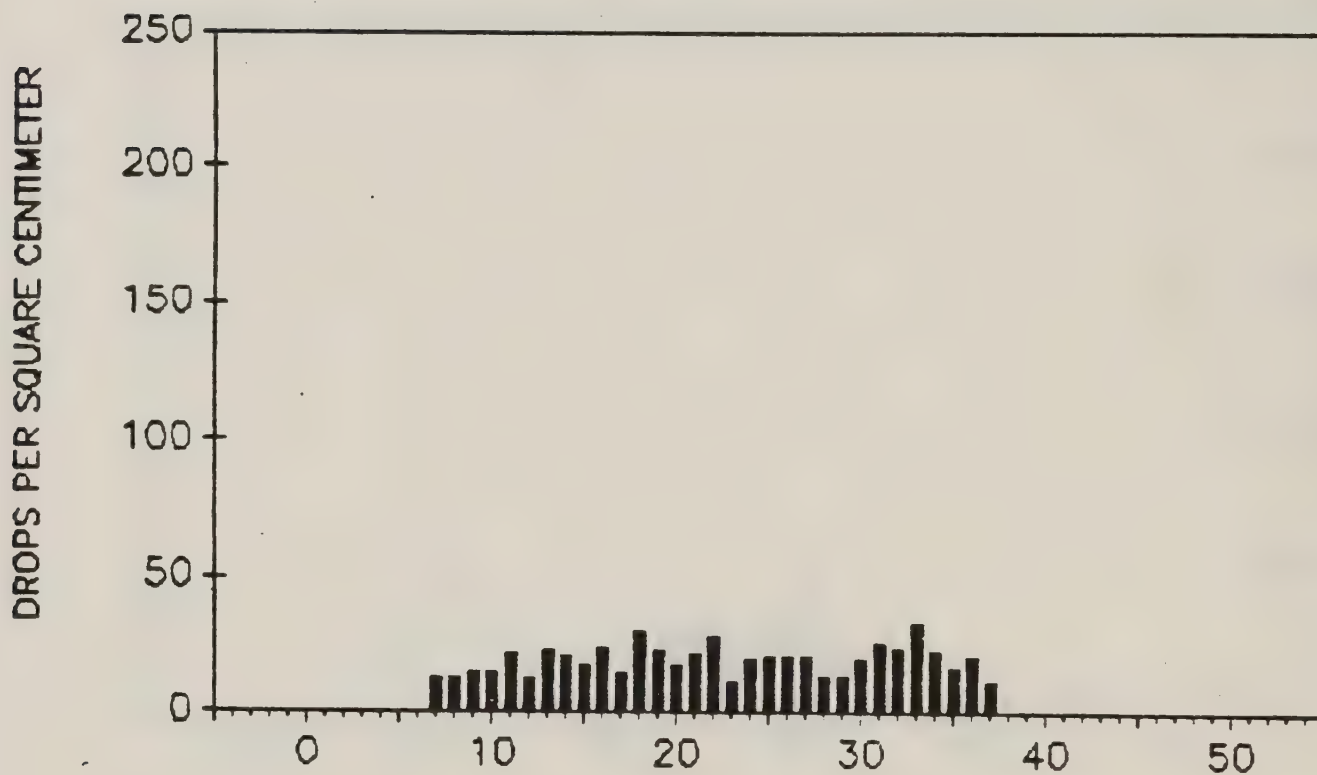


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6L
Bell 205A-1
Micronair AU5000
Wind Speed - 6 MPH
Wind Direction - 320°
Temperature - 53° F
RH - 75%

GROUND DEPOSITION ON CARDLINE

TRIAL 45



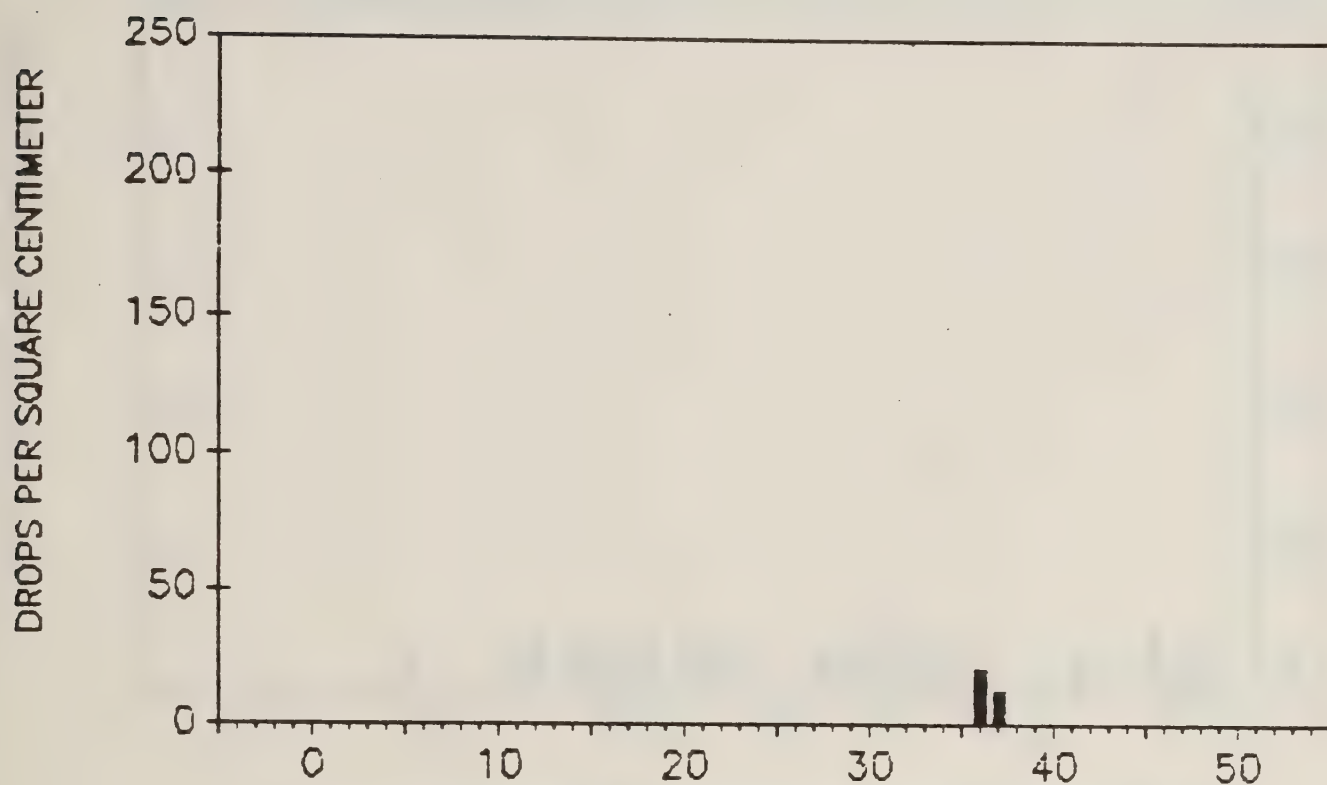
500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6L
Bell 205A-1
Micronair AU5000
Wind Speed - 6 MPH
Wind Direction - 320°
Temperature - 55° F
RH - 70%

DIPEL 6AF
BELL 205A-1
BEECOMIST

GROUND DEPOSITION ON CARDLINE

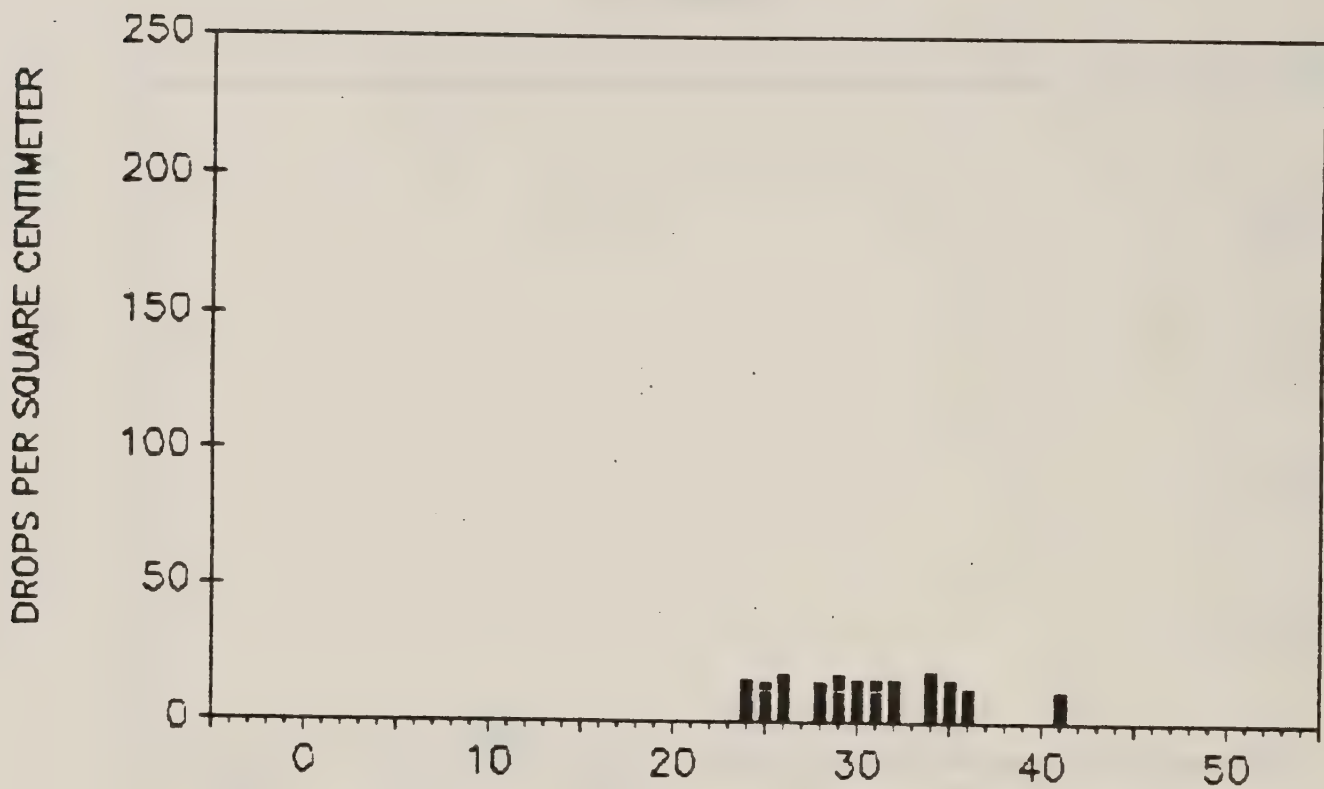
TRIAL 4



Dipel 6AF
Bell 205A-1
Beecomist
Wind Speed - 12 MPH
Wind Direction - 320°
Temperature - 65° F
RH - 27%

GROUND DEPOSITION ON CARDLINE

TRIAL 8

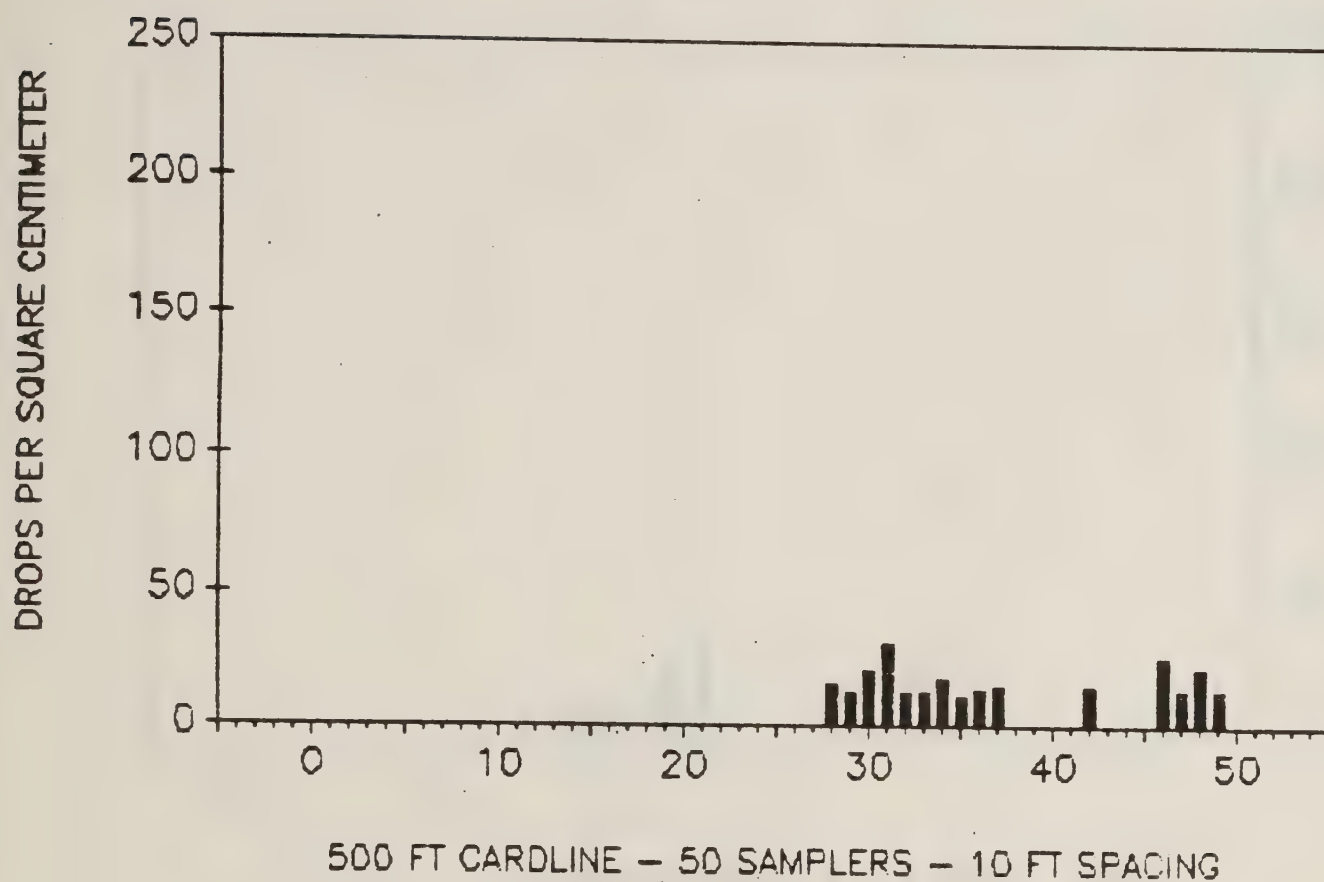


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6AF
Bell 205A-1
Beecomist
Wind Speed - 1-2 MPH
Wind Direction - 320°
Temperature - 40° F
RH - 44%

GROUND DEPOSITION ON CARDLINE

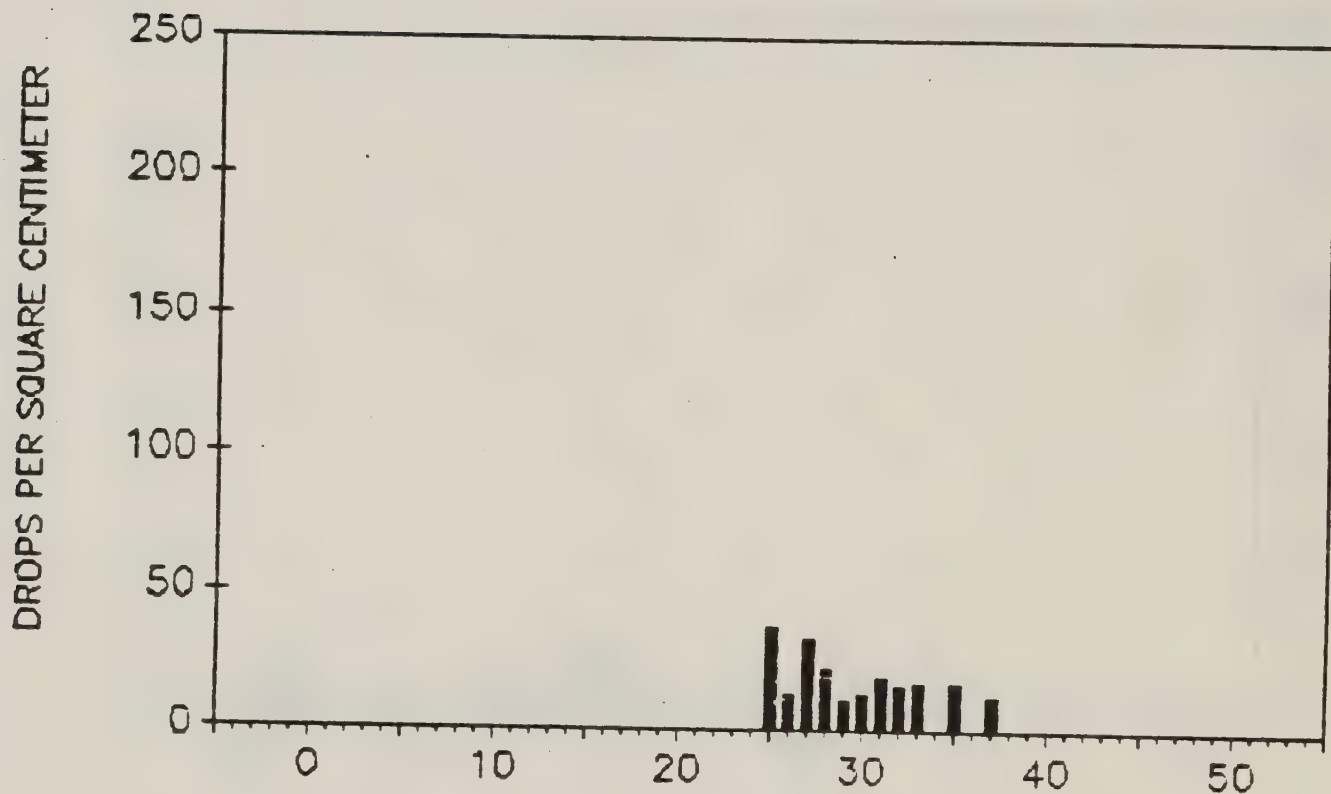
TRIAL 9



Dipel 6AF
Bell 205A-1
Beecomist
Wind Speed - 3 MPH
Wind Direction - 280°
Temperature - 37° F
RH - 90%

GROUND DEPOSITION ON CARDLINE

TRIAL 10



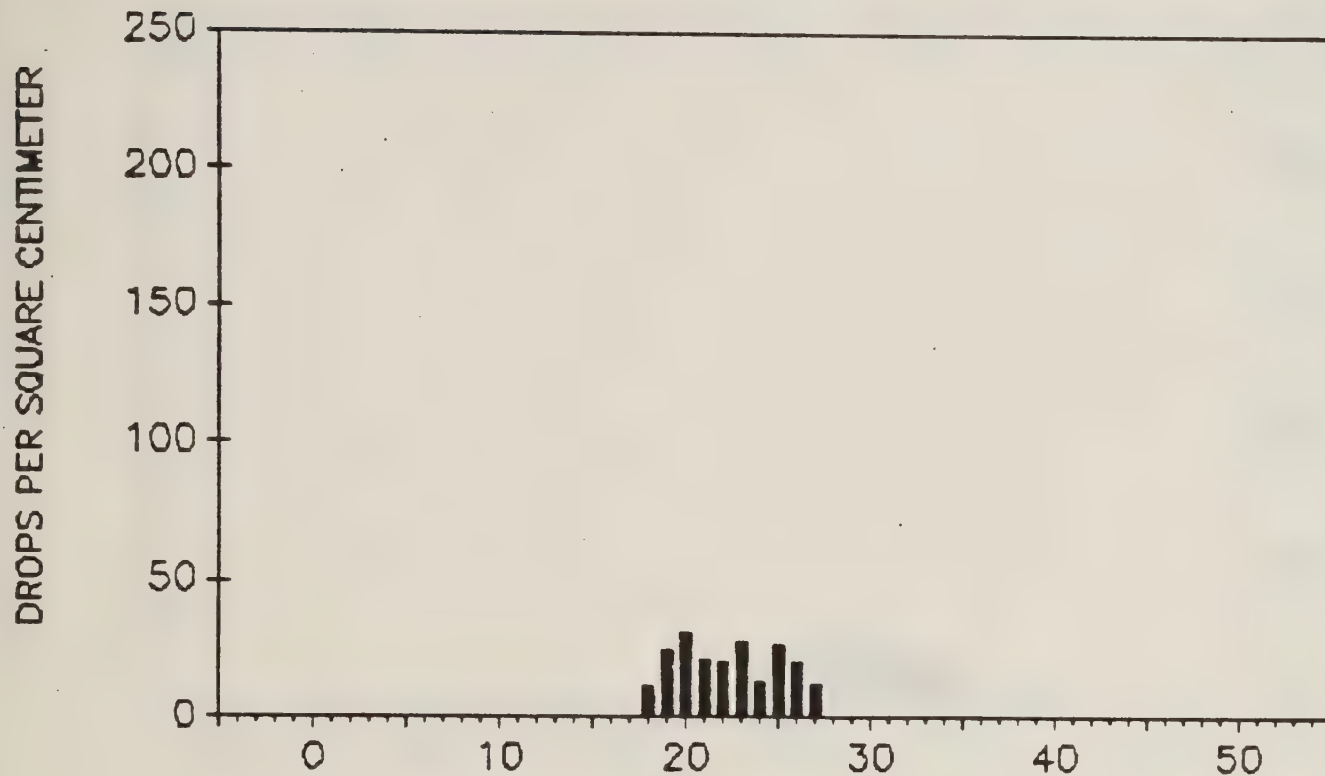
500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6AF
Bell 205A-1
Beecomist
Wind Speed - 2-3 MPH
Wind Direction - 310°
Temperature - 42° F
RH - 53%

DIPEL 6AF
AIR TRACTOR AT-301
MICRONAIR AU4000

GROUND DEPOSITION ON CARDLINE

TRIAL 11

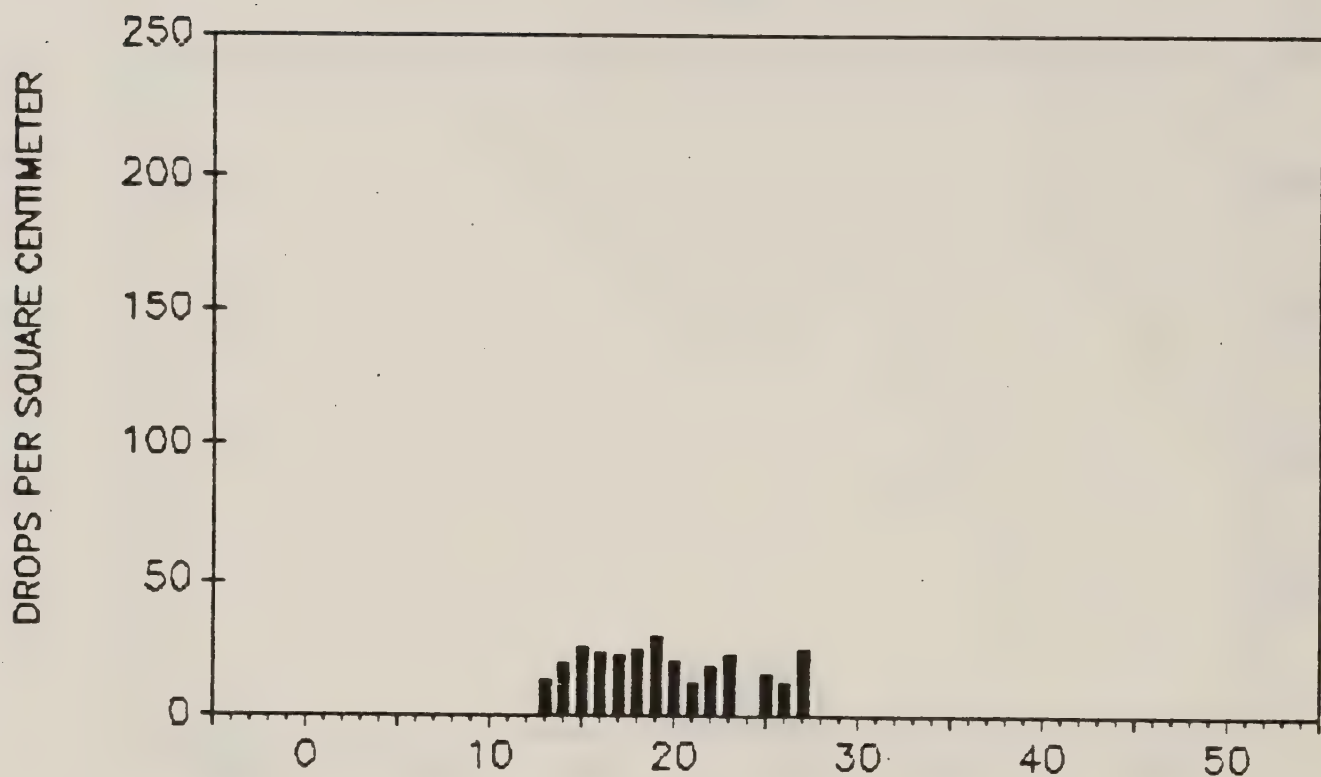


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6AF
Air Tractor AT-301
Micronair AU4000
Wind Speed - 4-5 MPH
Wind Direction - 280°
Temperature - 46° F
RH - 52%

GROUND DEPOSITION ON CARDLINE

TRIAL 12

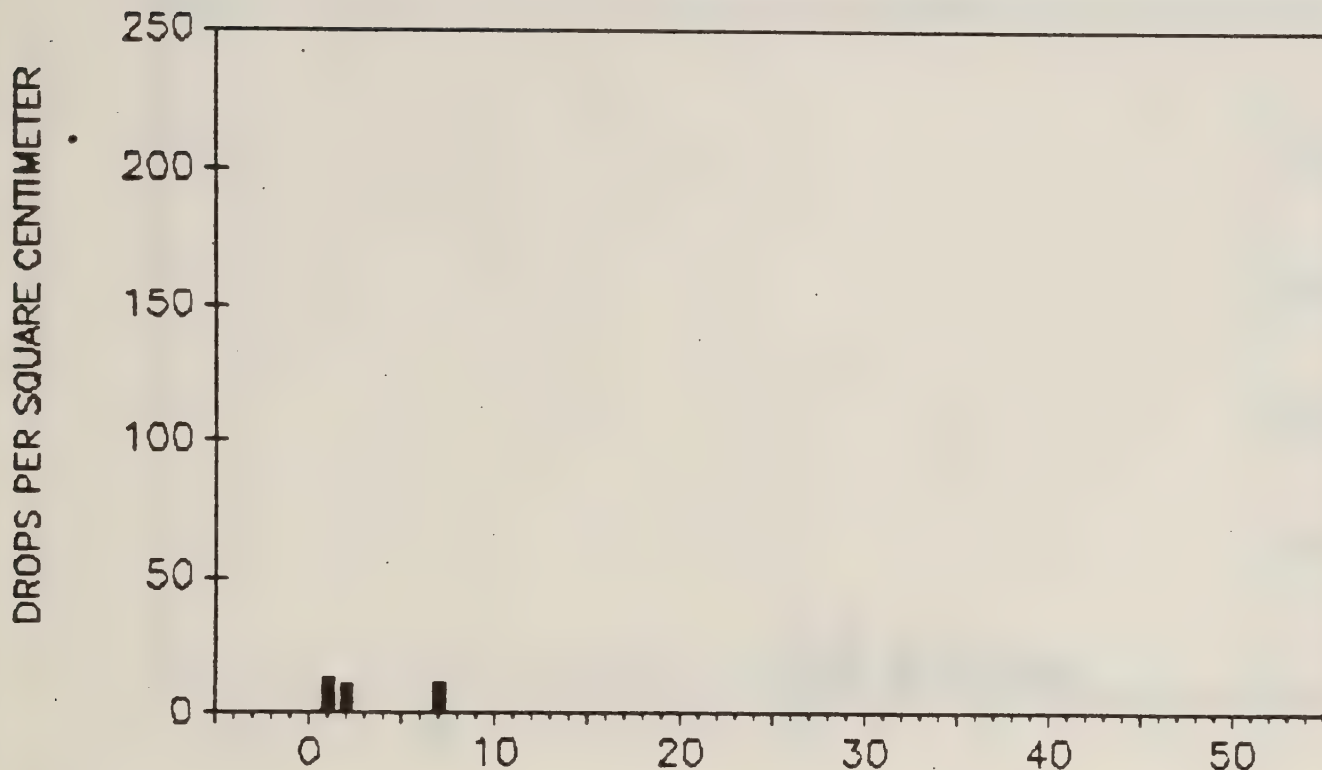


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6AF
Air Tractor AT-301
Micronair AU4000
Wind Speed - 6-8 MPH
Wind Direction - 310°
Temperature - 55° F
RH - 33%

GROUND DEPOSITION ON CARDLINE

TRIAL 13

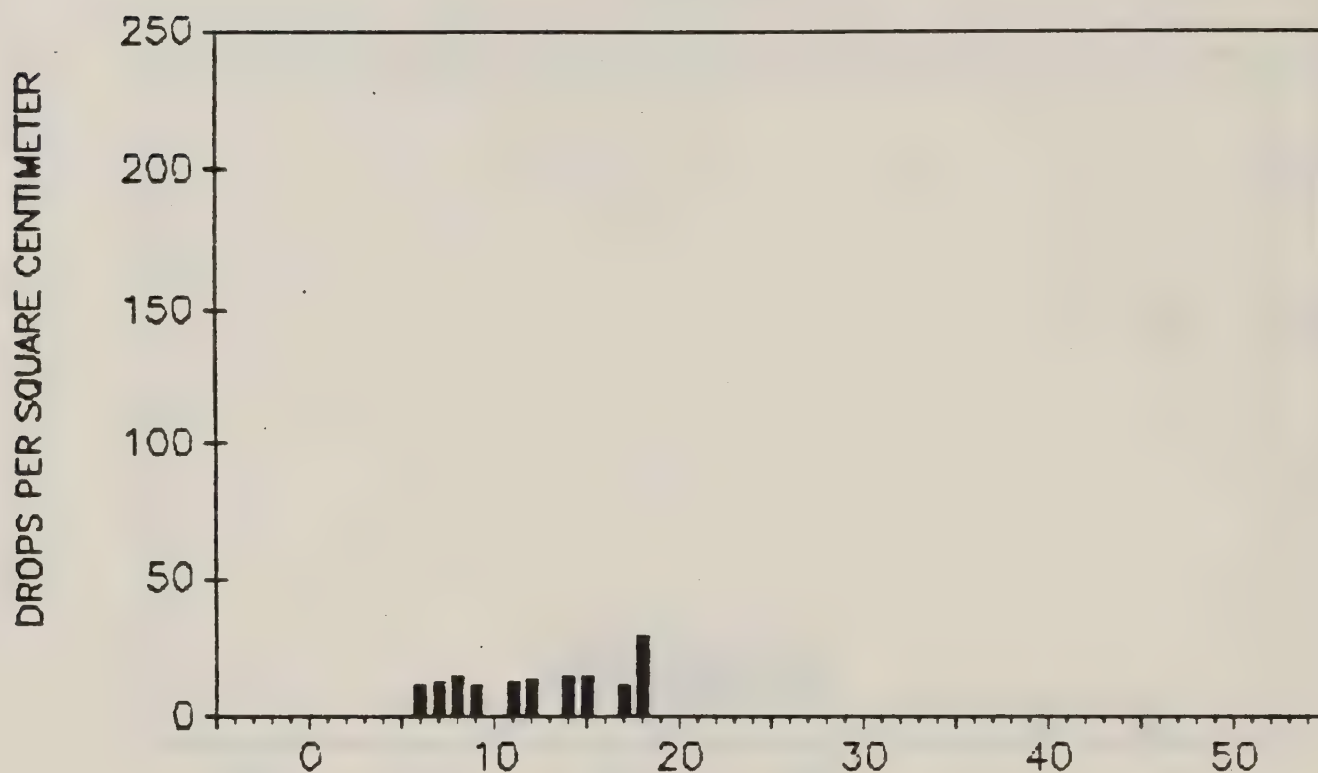


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6AF
Air Tractor AT-301
Micronair AU4000
Wind Speed - 10 MPH
Wind Direction - 320°
Temperature - 54° F
RH - 38%

GROUND DEPOSITION ON CARDLINE

TRIAL 14

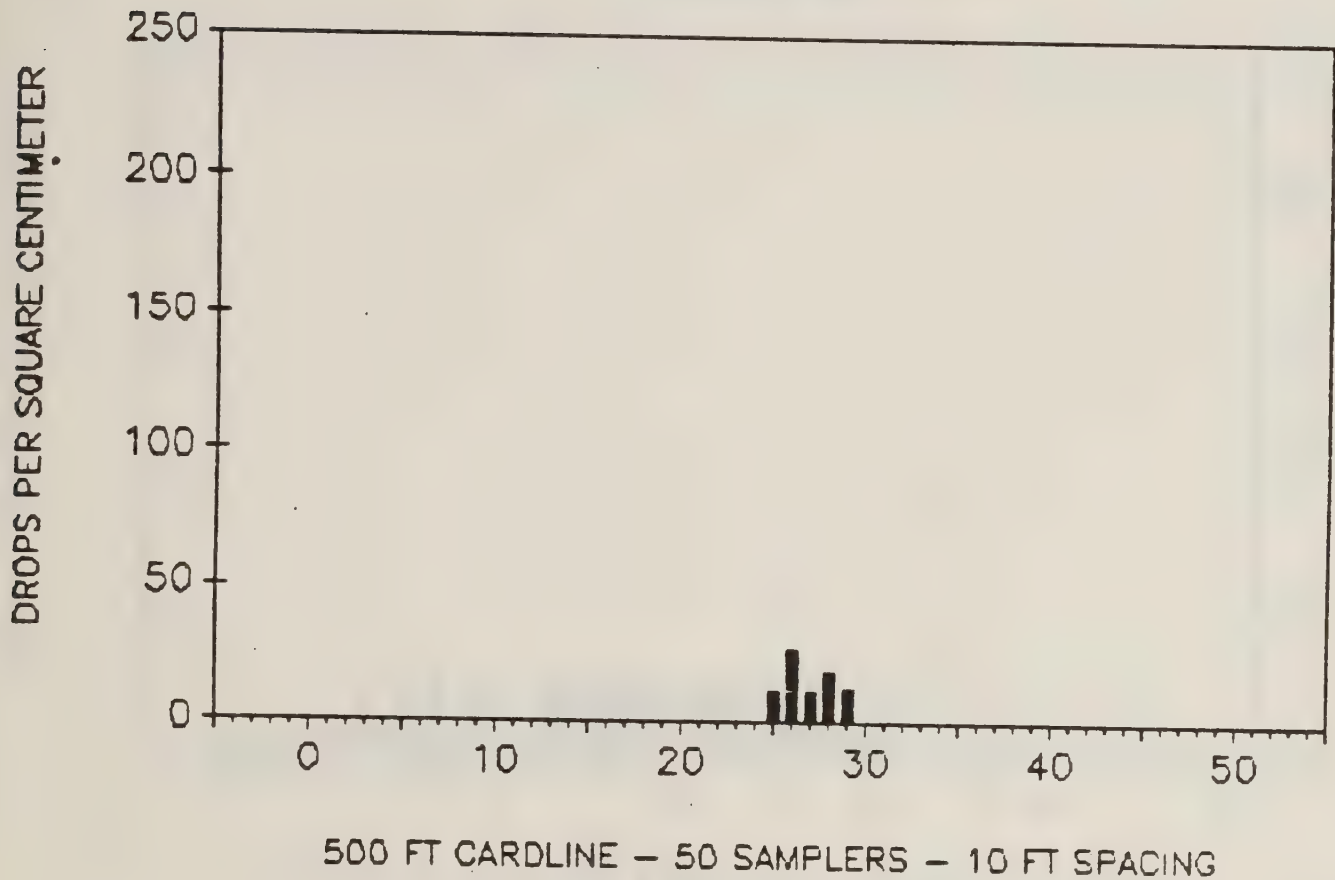


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6AF
Air Tractor AT-301
Micronair AU4000
Wind Speed - 6-8 MPH
Wind Direction - 340°
Temperature - 55° F
RH - 38%

GROUND DEPOSITION ON CARDLINE

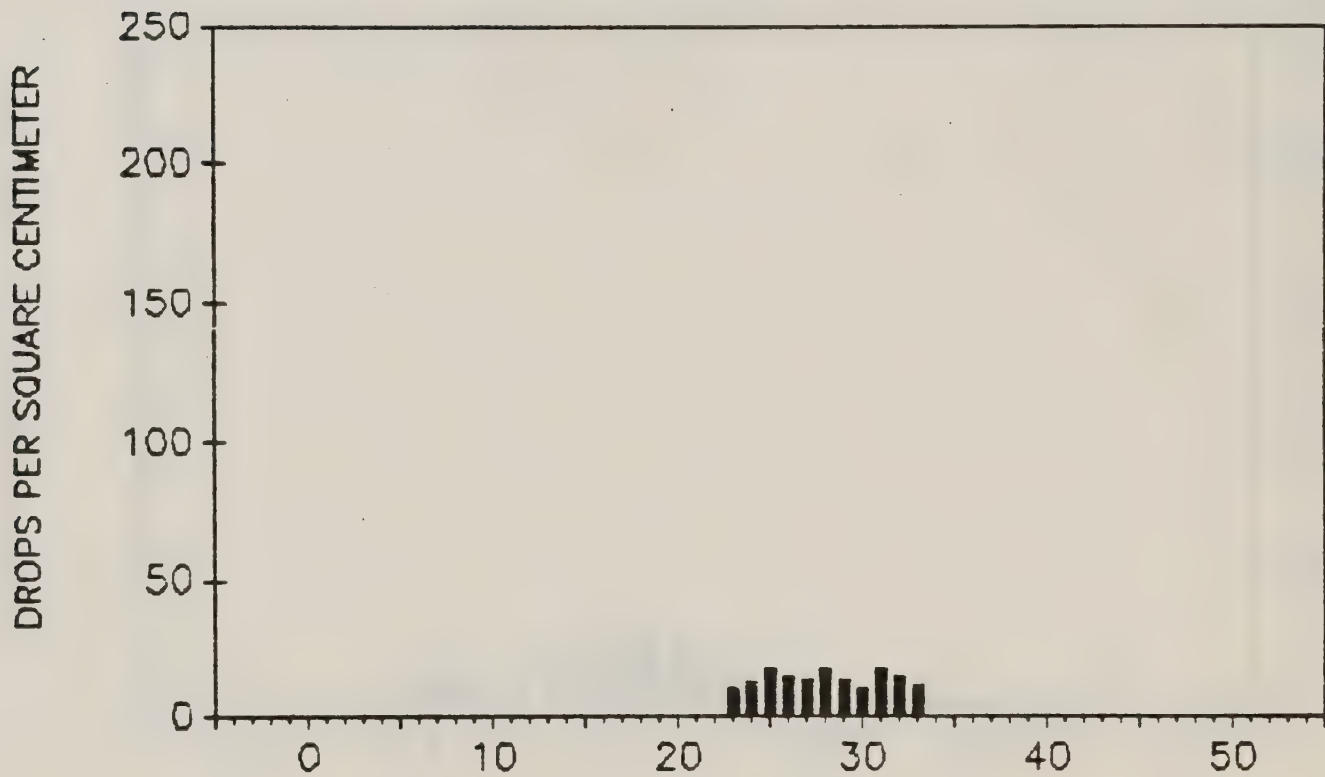
TRIAL 15



Dipel 6AF
Air Tractor AT-301
Micronair AU4000
Wind Speed - 2-3 MPH
Wind Direction - 280°
Temperature - 65° F
RH - 39%

GROUND DEPOSITION ON CARDLINE

TRIAL 16

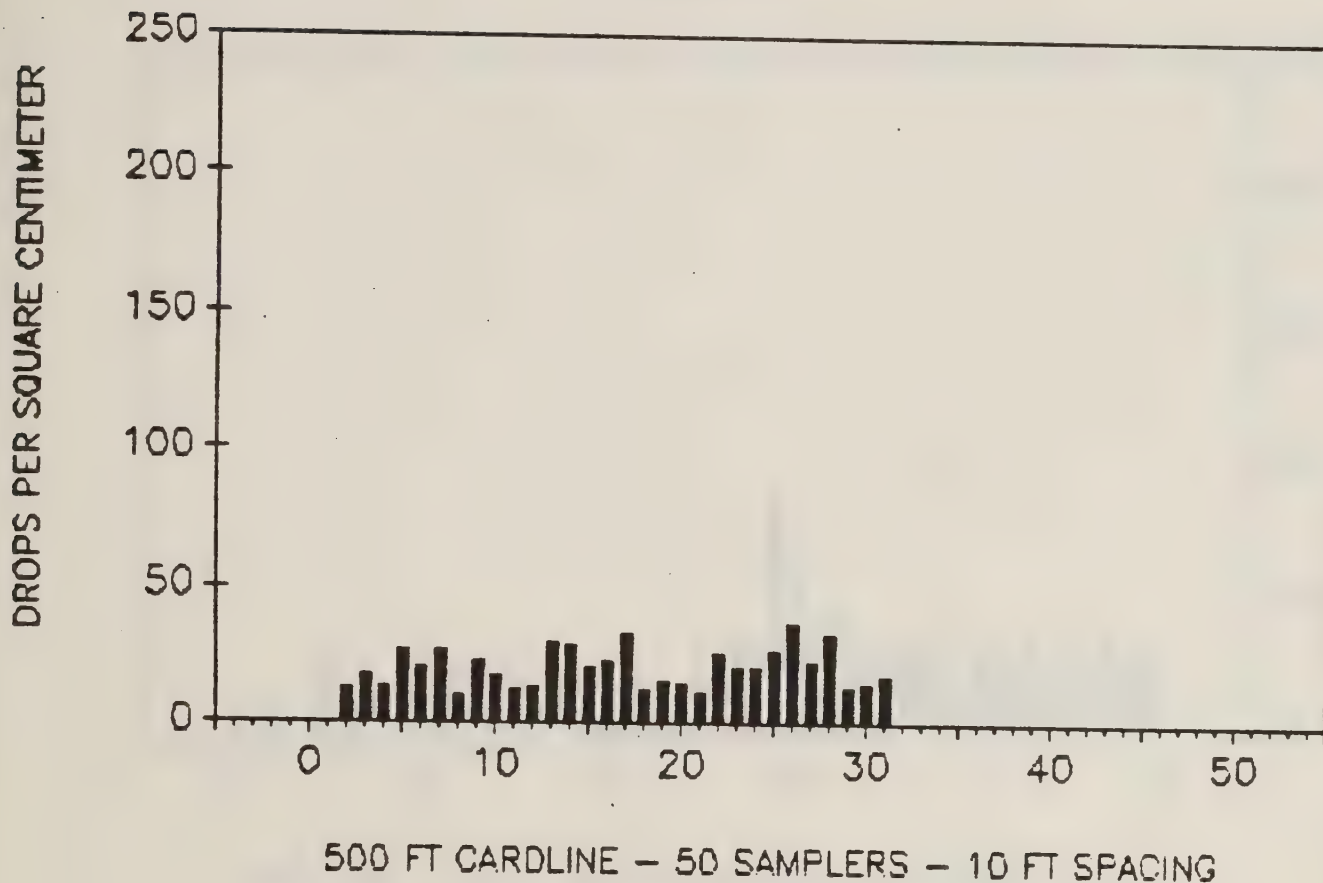


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6AF
Air Tractor AT-301
Micronair AU4000
Wind Speed - 2-3 MPH
Wind Direction - 280°
Temperature - 64° F
RH - 36%

GROUND DEPOSITION ON CARDLINE

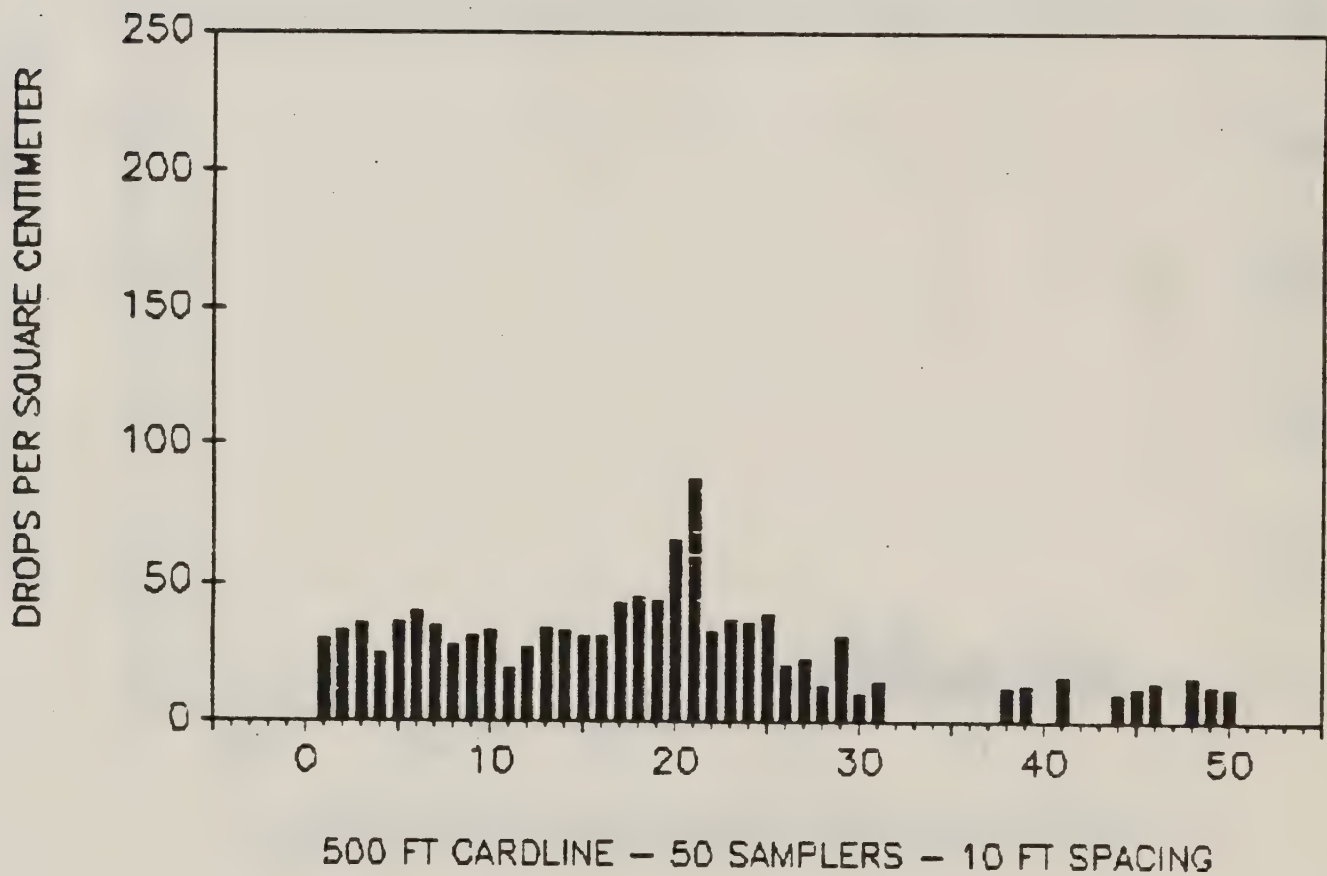
TRIAL 34



Dipel 6AF
Air Tractor AT-301
Micronair AU4000
Wind Speed - 6 MPH
Wind Direction - 320°
Temperature - 50° F
RH - 74%

GROUND DEPOSITION ON CARDLINE

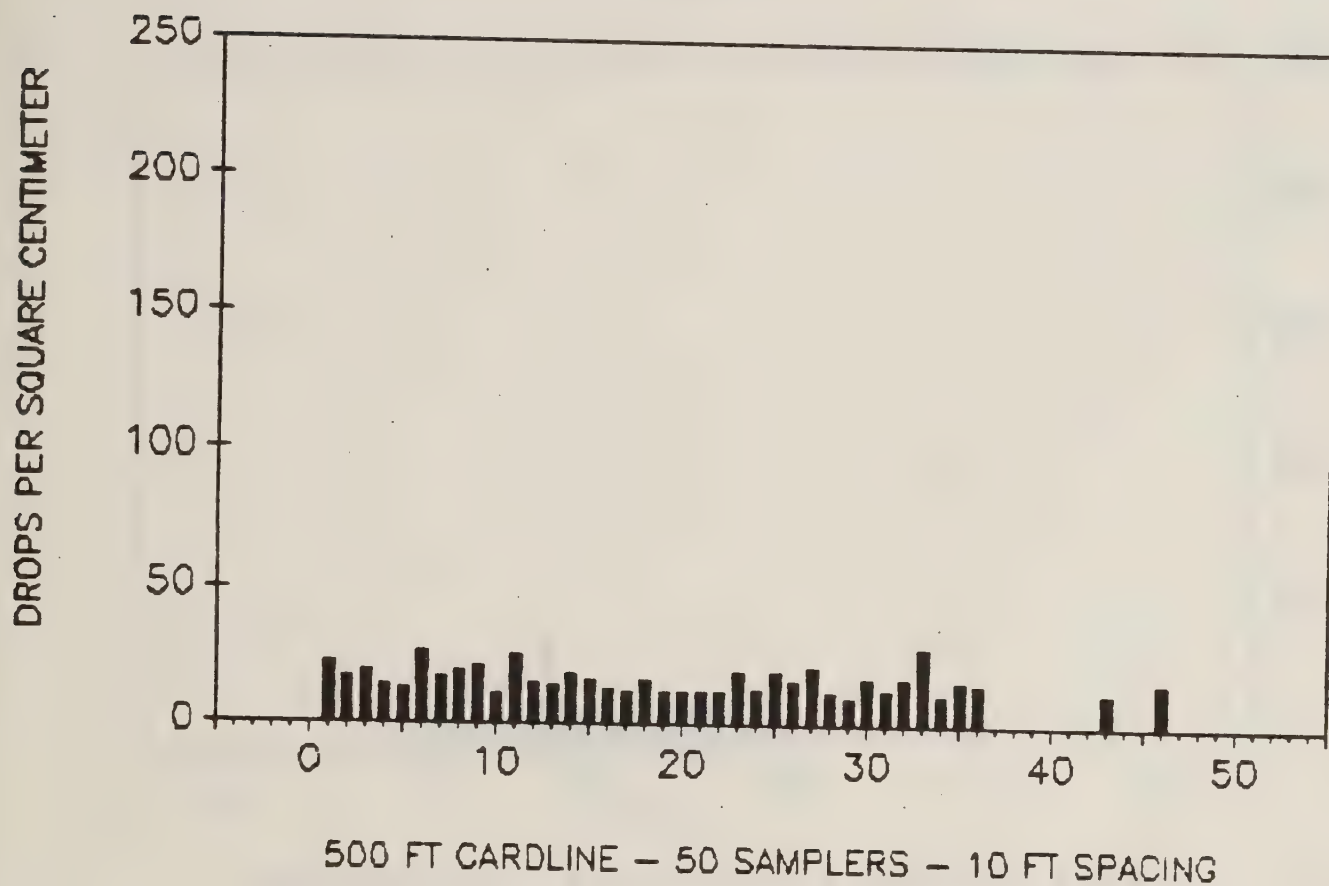
TRIAL 35



Dipel 6AF
Air Tractor AT-301
Micronair AU4000
Wind Speed - 4 MPH
Wind Direction - 320°
Temperature - 52° F
RH - 63%

GROUND DEPOSITION ON CARDLINE

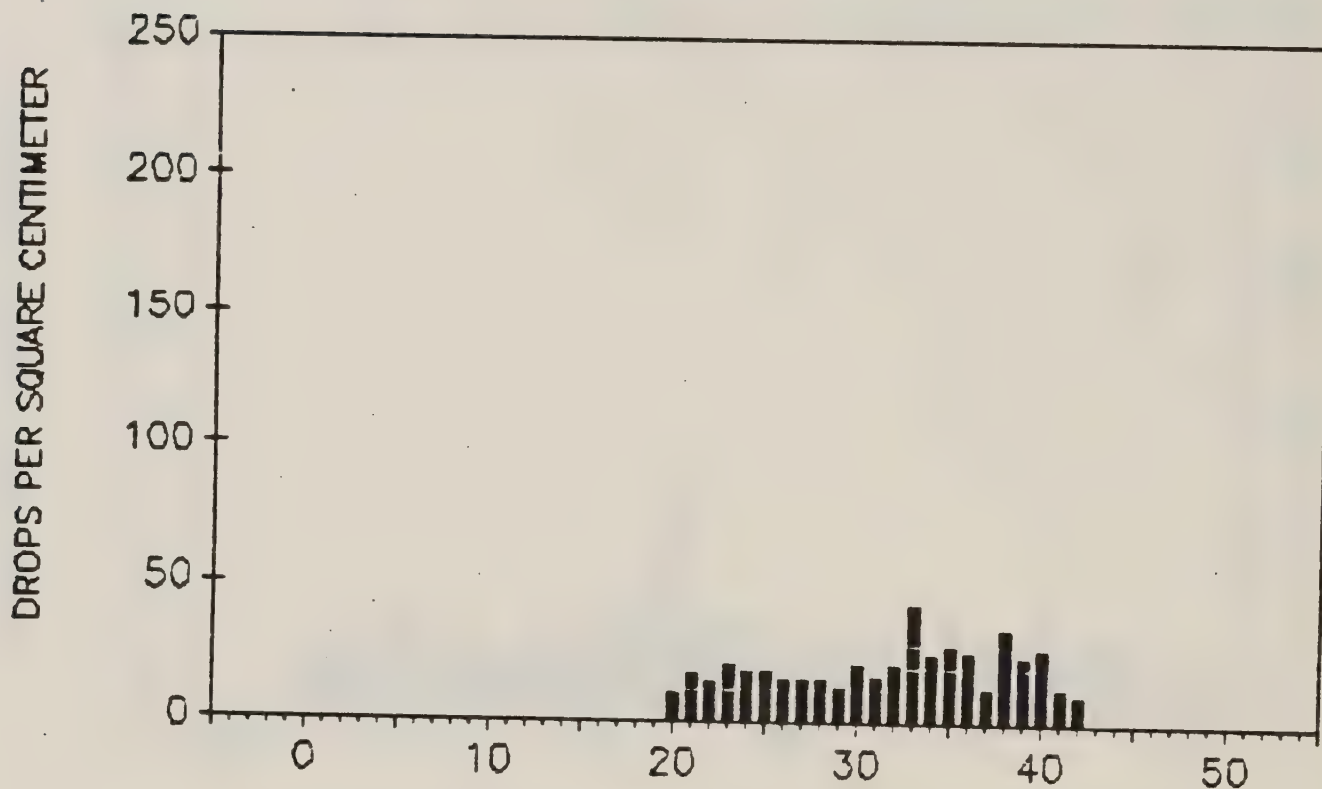
TRIAL 36



Dipel 6AF
Air Tractor AT-301
Micronair AU4000
Wind Speed - 4-5 MPH
Wind Direction - 320°
Temperature - 55° F
RH - 65%

GROUND DEPOSITION ON CARDLINE

TRIAL 37



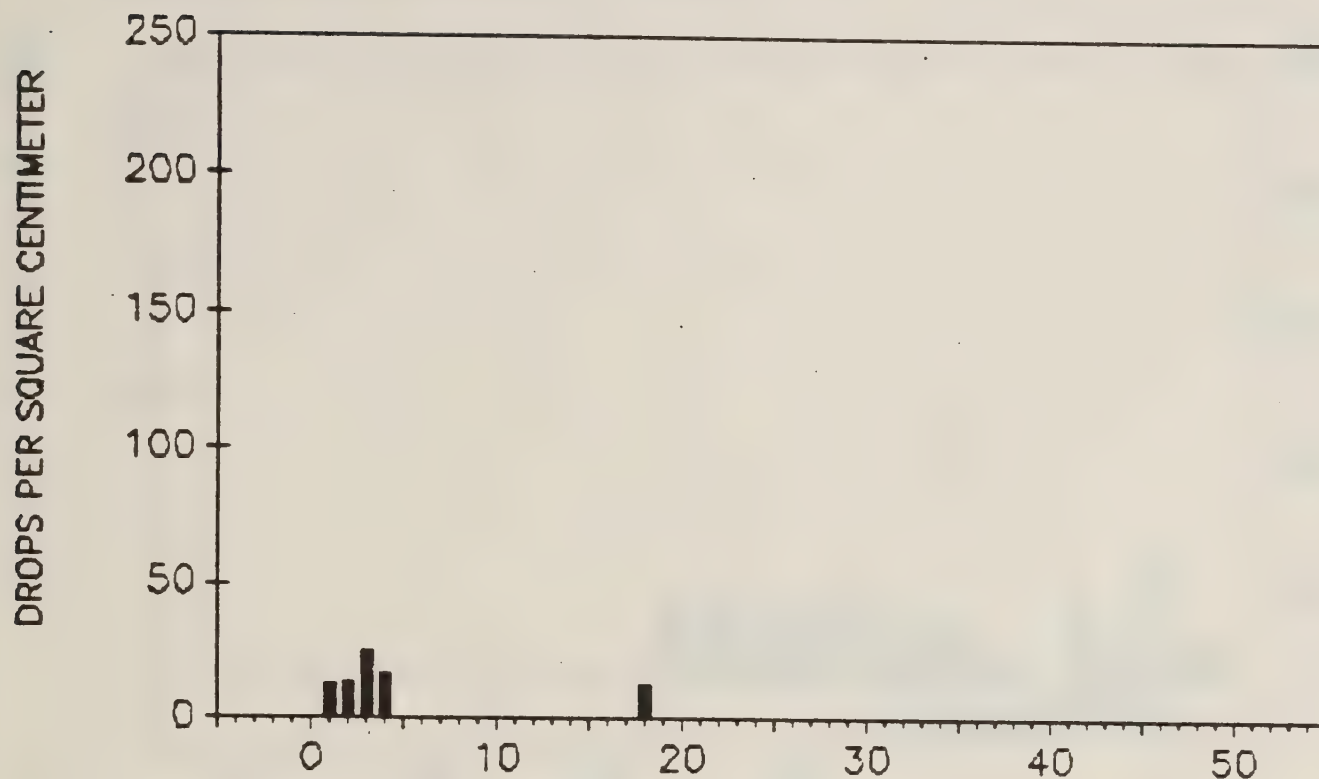
500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Dipel 6AF
Air Tractor AT-301
Micronair AU4000
Wind Speed - 5 MPH
Wind Direction - 310°
Temperature - 57° F
RH - 62%

THURICIDE 48LV
BELL 205A-1
BEECOMIST

GROUND DEPOSITION ON CARDLINE

TRIAL 19

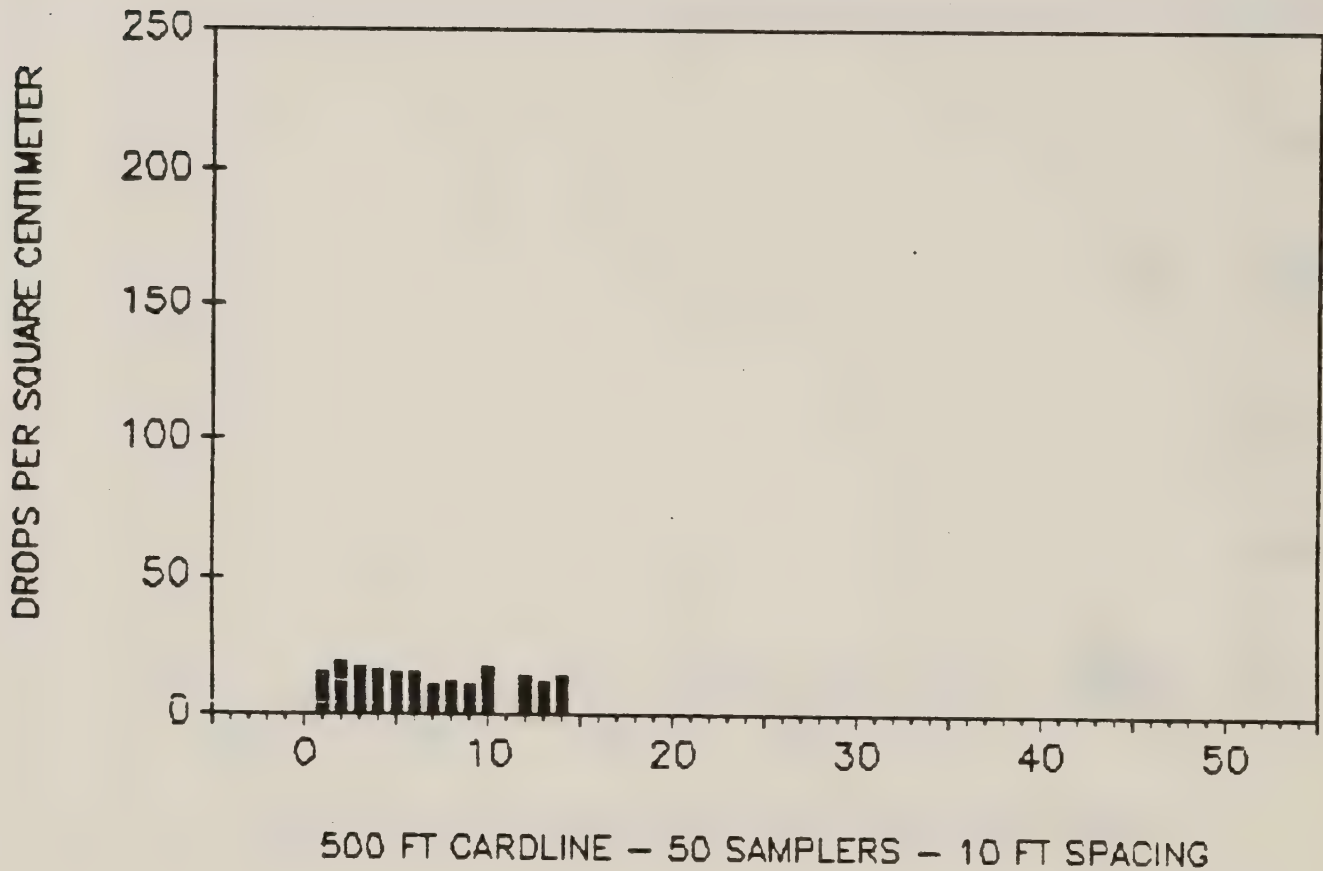


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Thuricide 48LV
Bell 205A-1
Beecomist
Wind Speed - 2-3 MPH
Wind Direction - 308°
Temperature - 37° F
RH - 82%

GROUND DEPOSITION ON CARDLINE

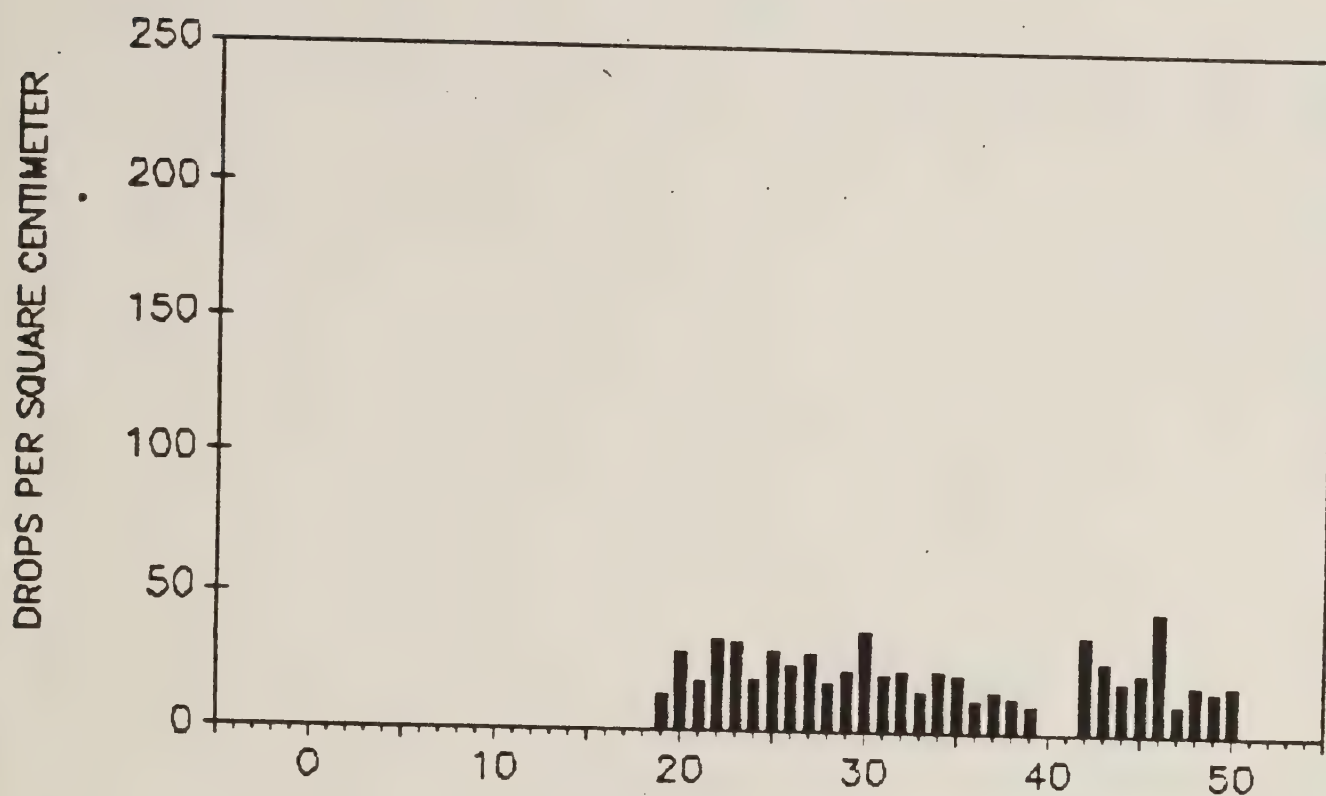
TRIAL 20



Thuricide 48LV
Bell 205A-1
Beecomist
Wind Speed - less than 1 MPH
Wind Direction - Variable
Temperature - 39° F
RH - 58%

GROUND DEPOSITION ON CARDLINE

TRIAL 21



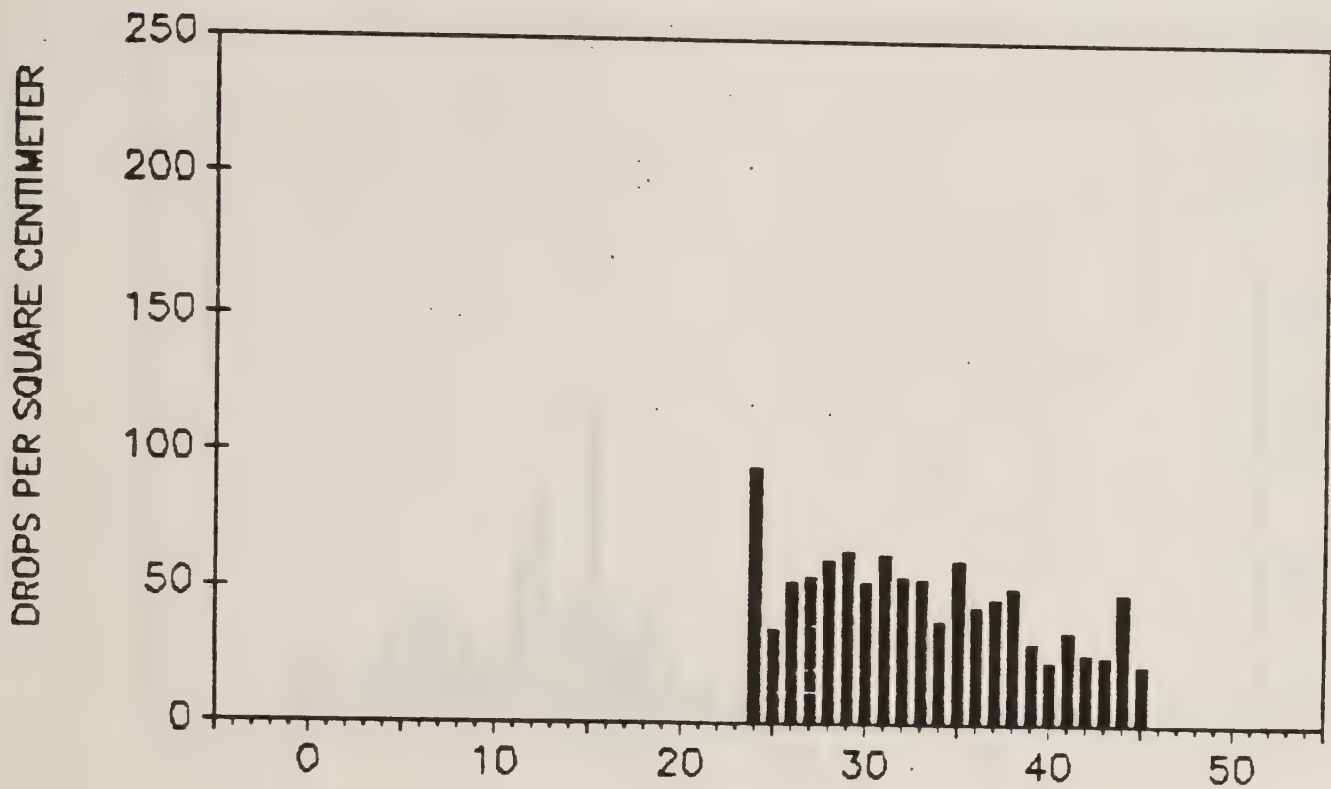
500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Thuricide 48LV
Bell 205A-1
Beecomist
Wind Speed - 1-2 MPH
Wind Direction - Variable
Temperature - 48° F
RH - 52%

THURICIDE 48LV
AIR TRACTOR AT-301
MICRONAIR AU4000

GROUND DEPOSITION ON CARDLINE

TRIAL 22

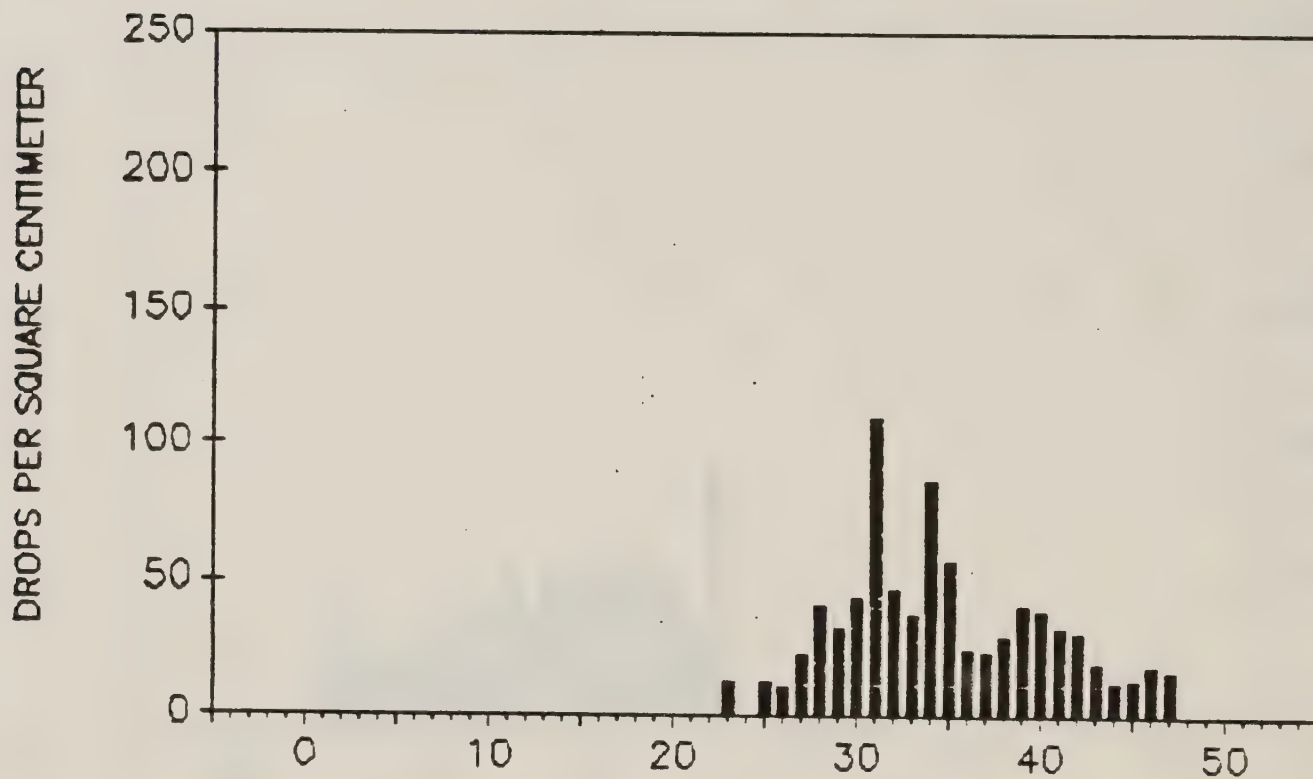


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Thuricide 48LV
Air Tractor AT-301
Micronair AU4000
Wind Speed - 1-2 MPH
Wind Direction - Variable
Temperature - 42° F
RH - 68%

GROUND DEPOSITION ON CARDLINE

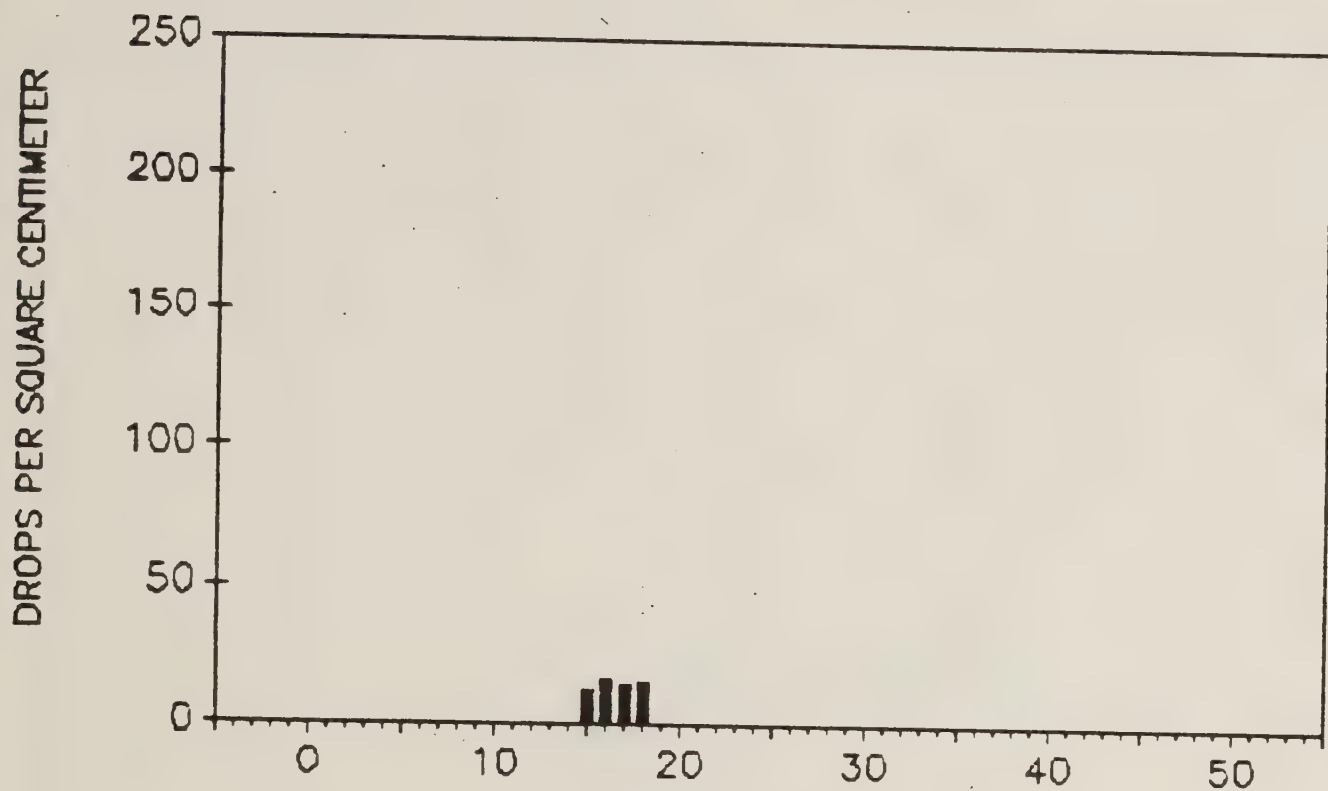
TRIAL 23



Thuricide 48LV
Air Tractor AT-301
Micronair AU4000
Wind Speed - 2-3 MPH
Wind Direction - Surface SW
Aloft NW
Temperature - 47° F
RH - 66%

GROUND DEPOSITION ON CARDLINE

TRIAL 24



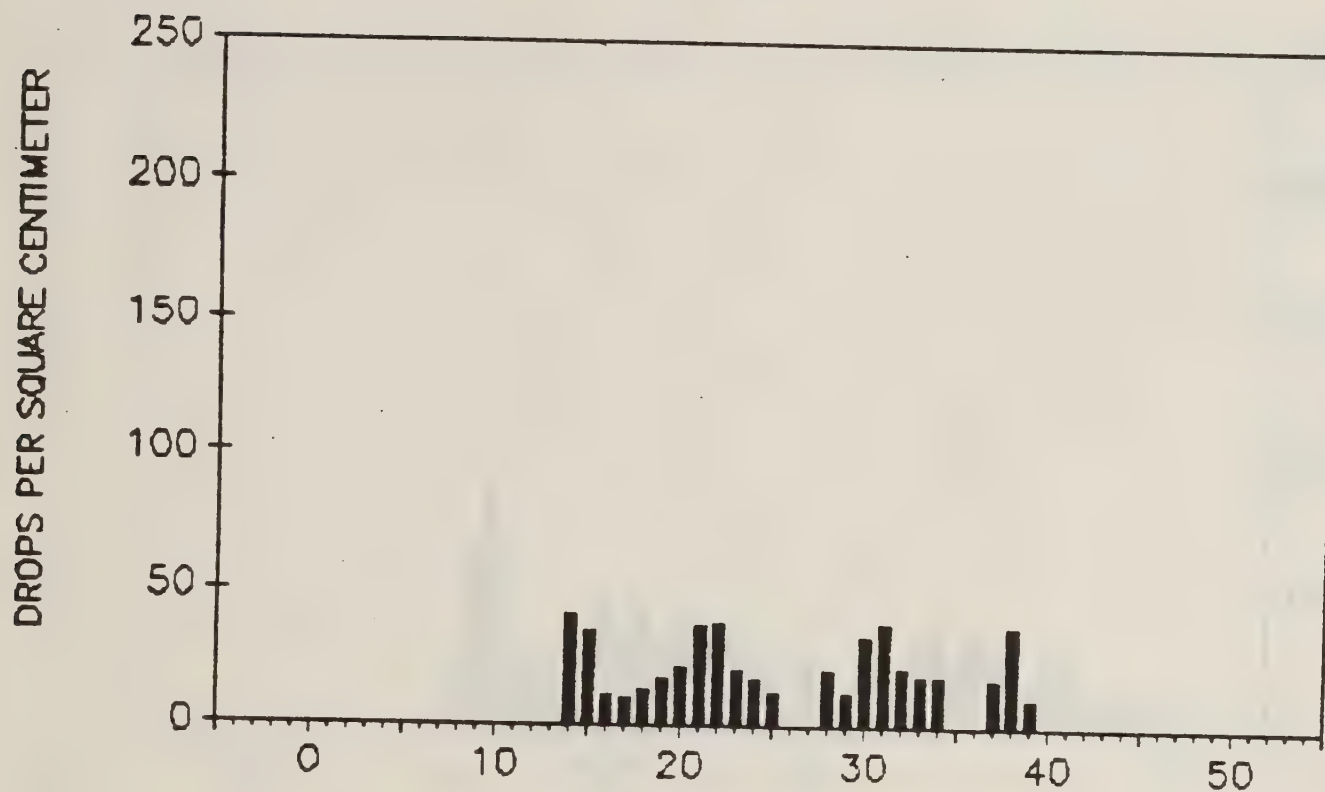
500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Thuricide 48LV
Air Tractor AT-301
Micronair AU4000
Wind Speed - 3-4 MPH
Wind Direction - 65°
Temperature - 49° F
RH - 61%

THURICIDE 32LV
BELL 205A-1
BEECOMIST

GROUND DEPOSITION ON CARDLINE

TRIAL 25



Thuricide 32LV

Bell 205A-1

Beecomist

Wind Speed - 4-5 MPH

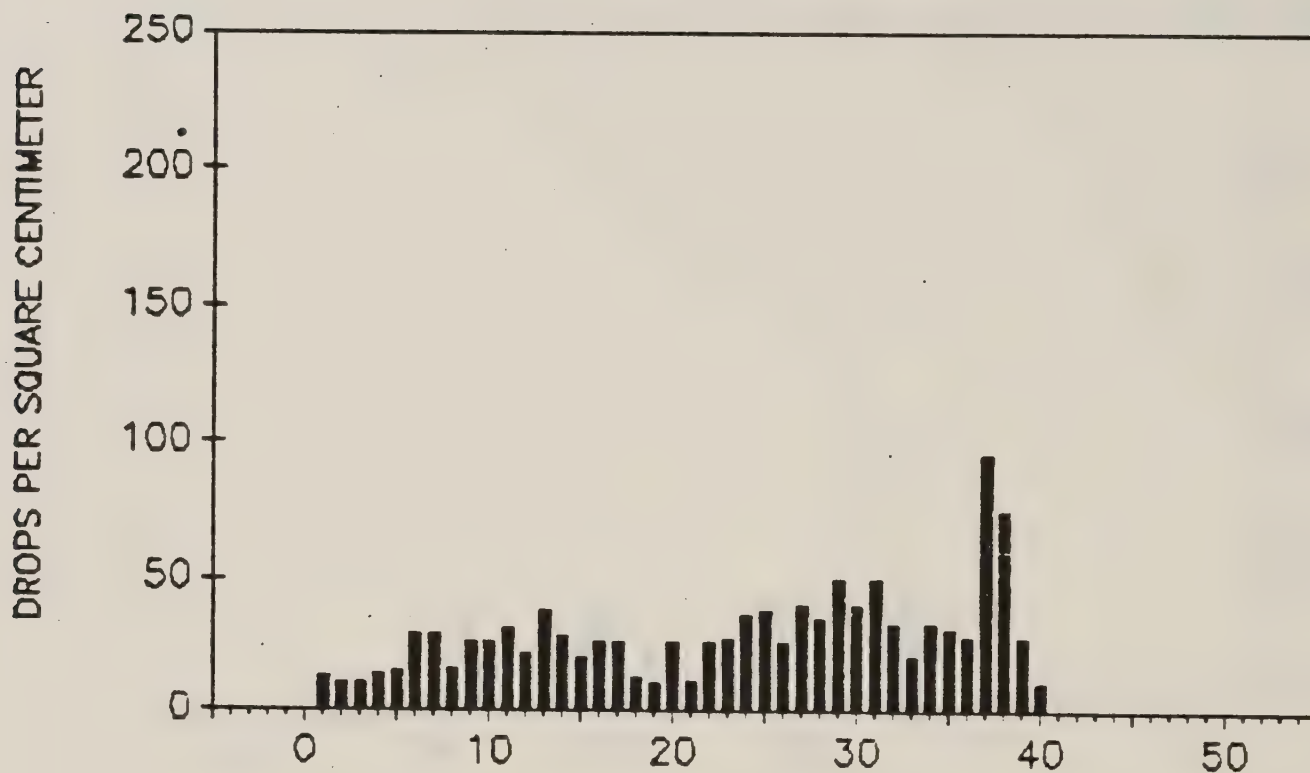
Wind Direction - 50°

Temperature - 53° F

RH - 74%

GROUND DEPOSITION ON CARDLINE

TRIAL 26



Thuricide 32LV

Bell 205A-1

Beecomist

Wind Speed - 3-4 MPH

Wind Direction - SE

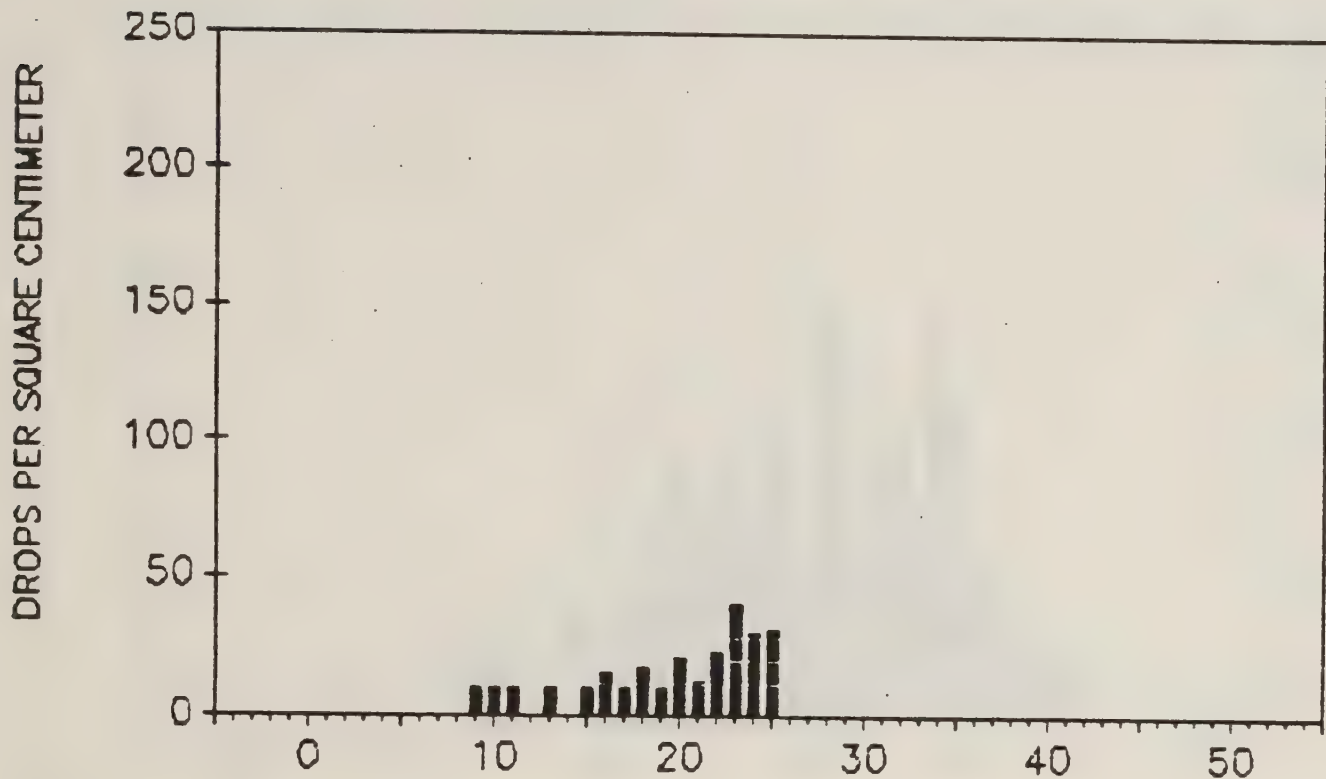
Temperature - 55° F

RH - 72%

THURICIDE 32LV
AIR TRACTOR AT-301
MICRONAIR AU4000

GROUND DEPOSITION ON CARDLINE

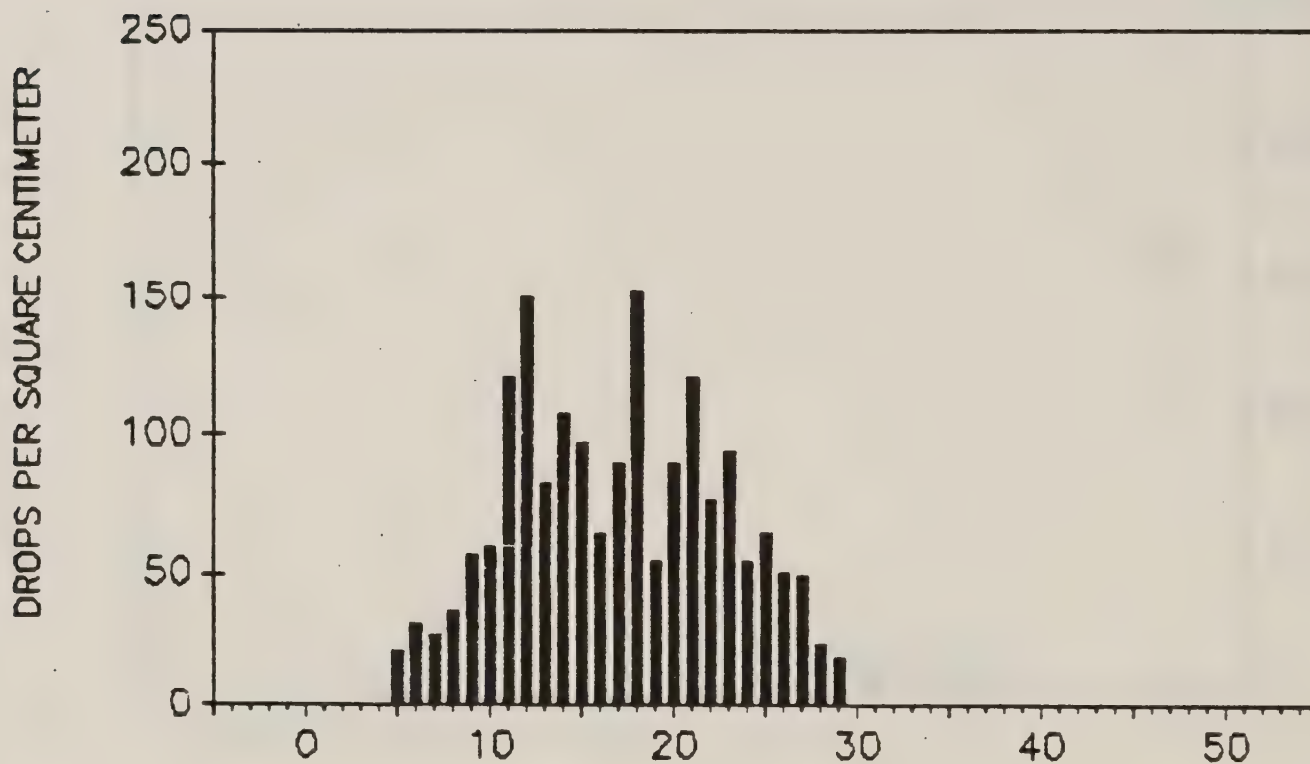
TRIAL 27



Thuricide 32LV
Air Tractor AT-301
Micronair AU4000
Wind Speed - 2-4 MPH
Wind Direction - Variable (SE)
Temperature - 56° F
RH - 65%

GROUND DEPOSITION ON CARDLINE

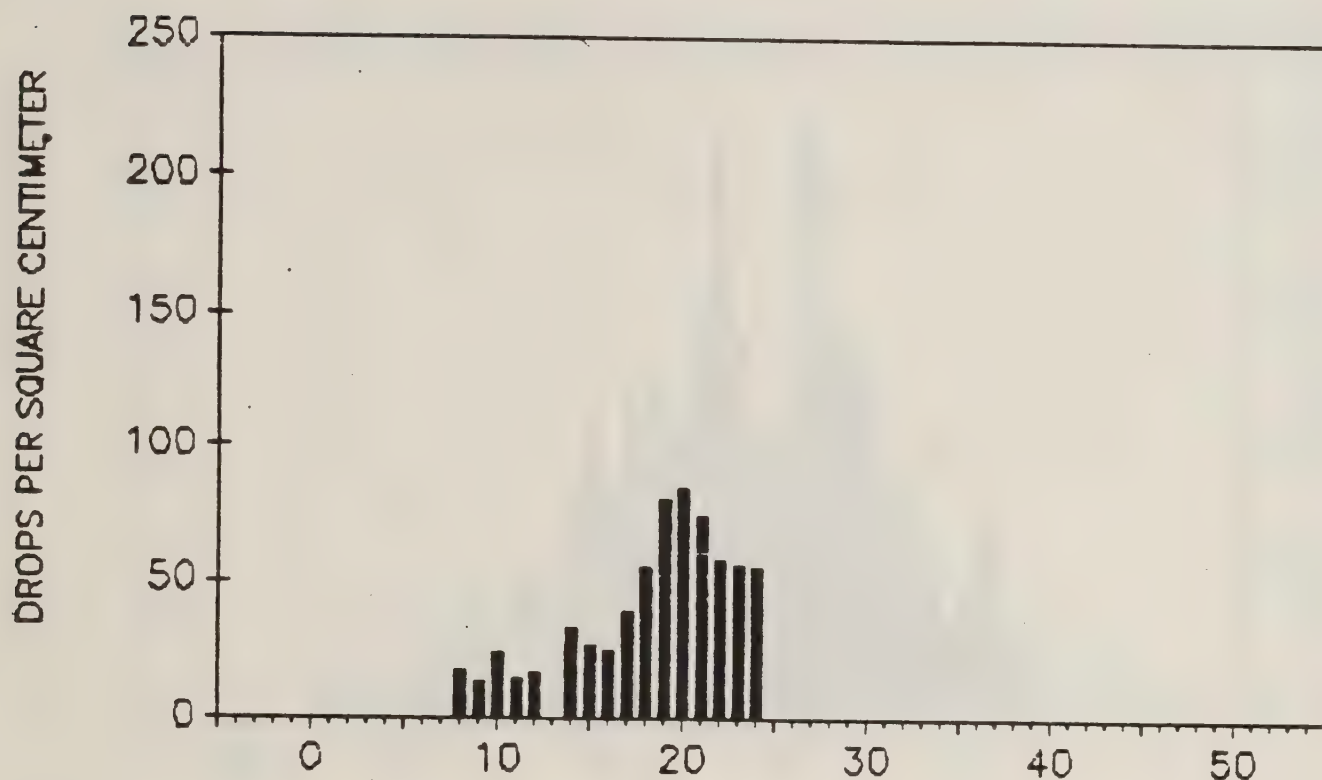
TRIAL 28



Thuricide 32LV
Air Tractor AT-301
Micronair AU4000
Wind Speed - 5 MPH
Wind Direction - 140°
Temperature - 66° F
RH - 48%

GROUND DEPOSITION ON CARDLINE

TRIAL 29

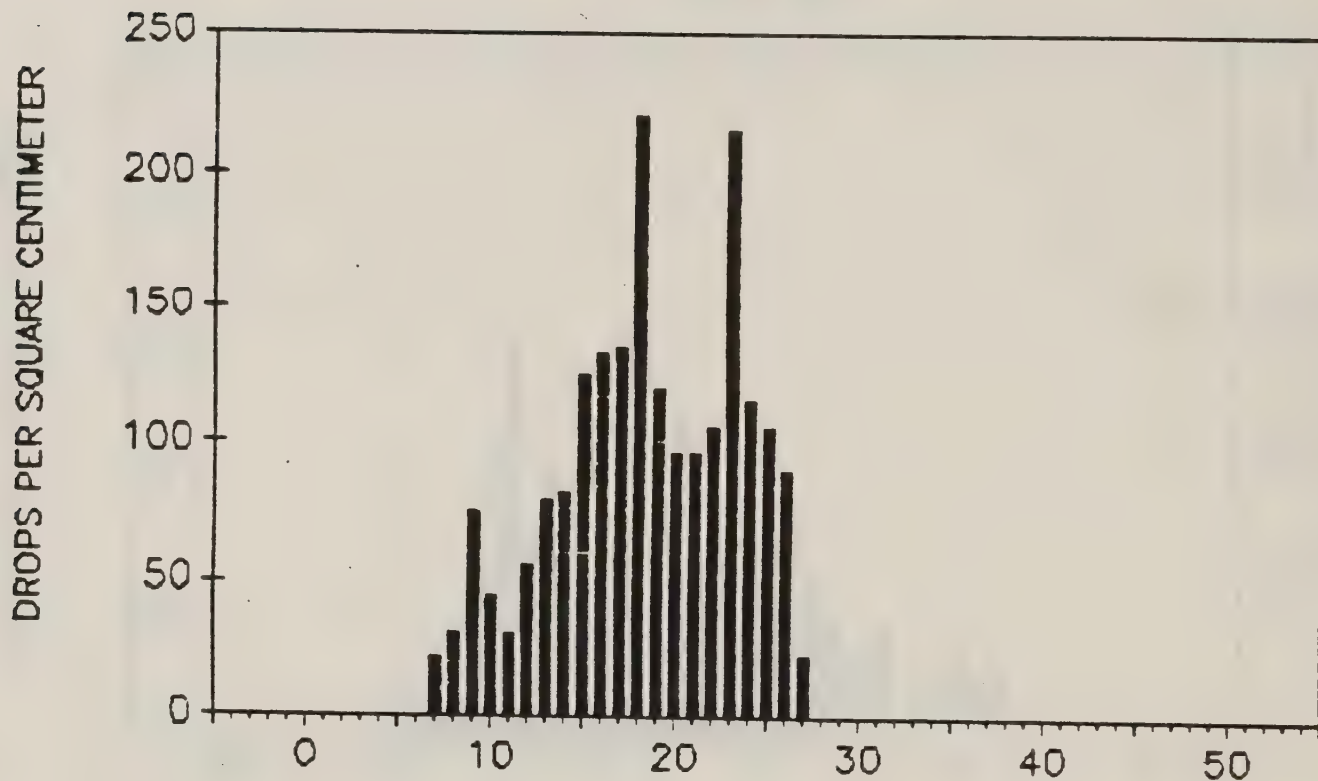


500 FT CARDLINE - 50 SAMPLERS - 10 FT SPACING

Thuricide 32LV
Air Tractor AT-301
Micronair AU4000
Wind Speed - 4 MPH
Wind Direction - 130°
Temperature - 65° F
RH - 48%

GROUND DEPOSITION ON CARDLINE

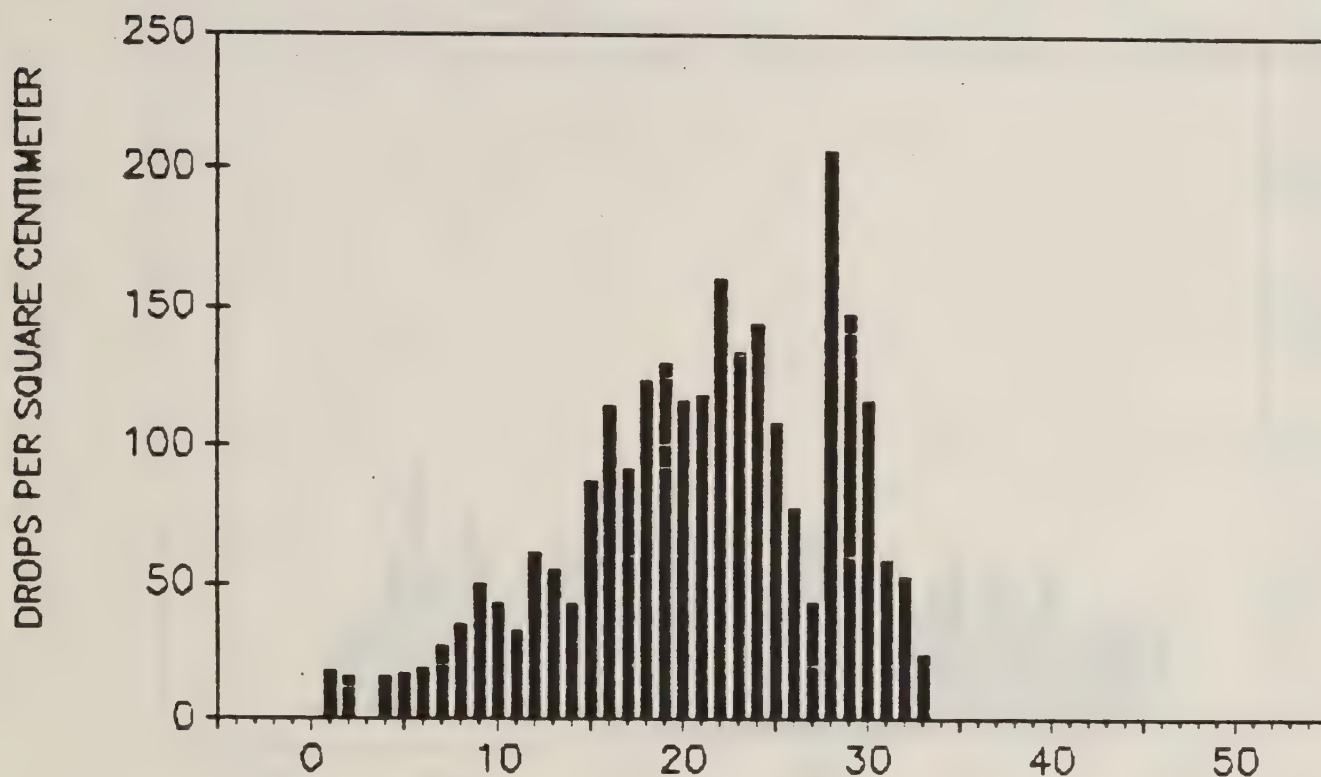
TRIAL 30



Thuricide 32LV
Air Tractor AT-301
Micronair AU4000
Wind Speed - 5 MPH
Wind Direction - 140°
Temperature - 63° F
RH - 51%

GROUND DEPOSITION ON CARDLINE

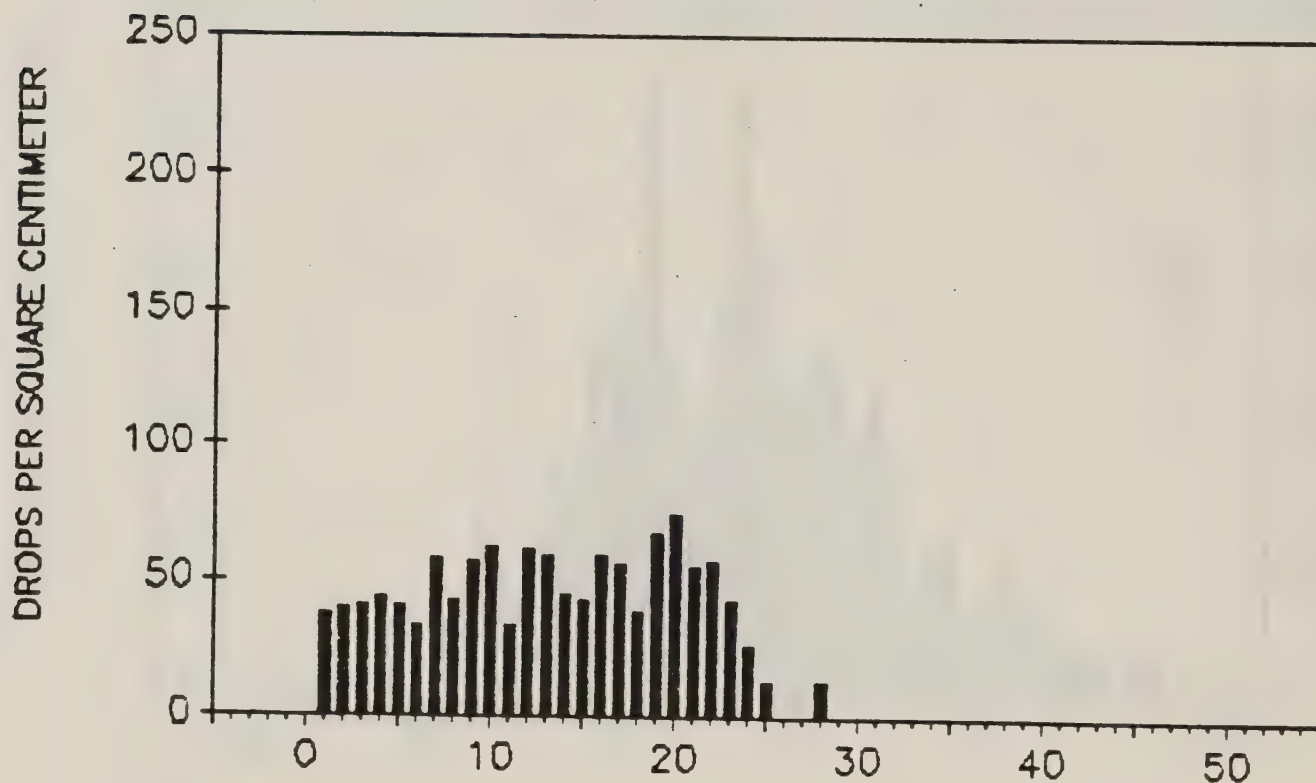
TRIAL 31



Thuricide 32LV
Air Tractor AT-301
Micronair AU4000
Wind Speed - 3-5 MPH
Wind Direction - 320°
Temperature - 41° F
RH - 84%

GROUND DEPOSITION ON CARDLINE

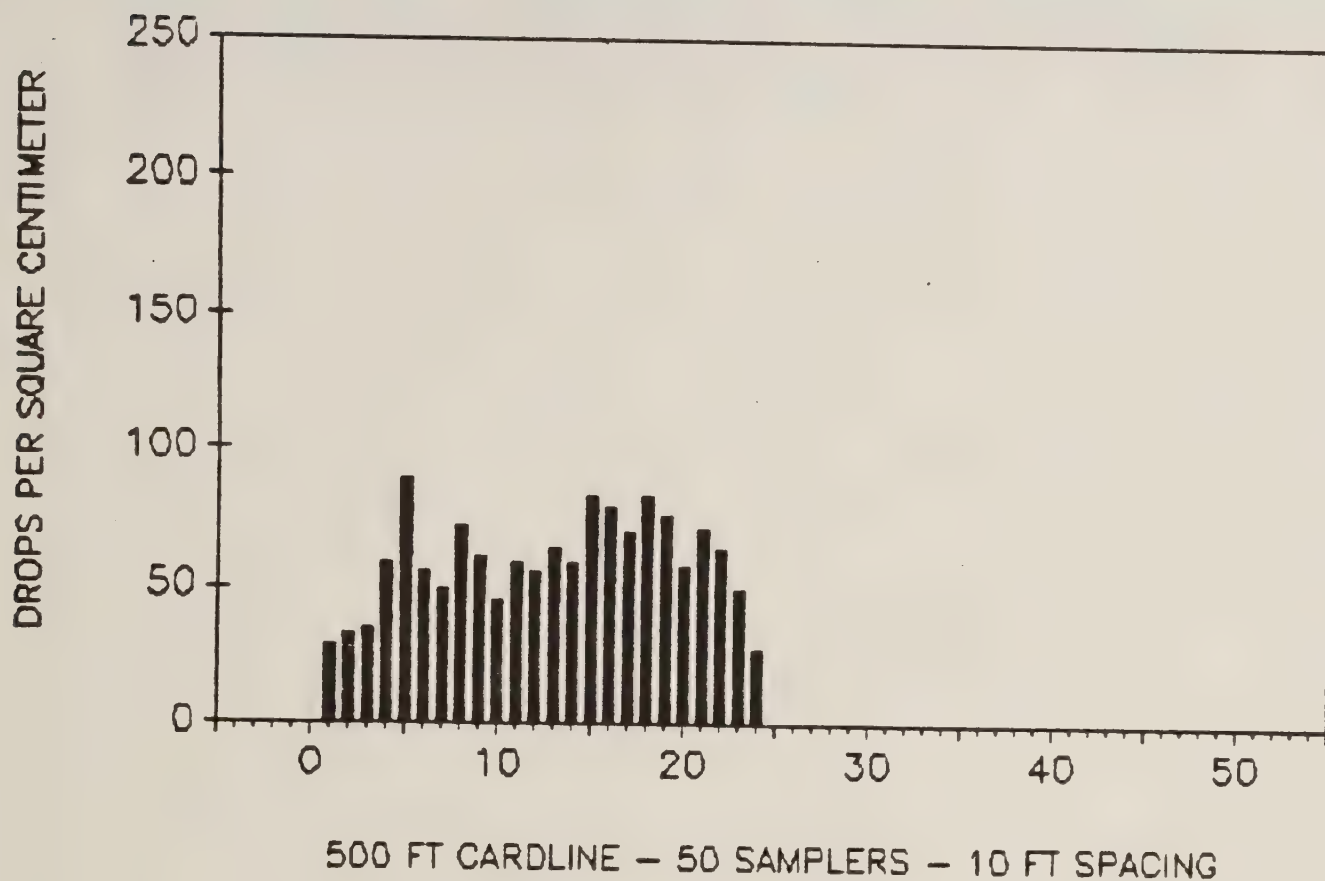
TRIAL 32



Thuricide 32LV
Air Tractor AT-301
Micronair AU4000
Wind Speed - 6 MPH
Wind Direction - 330°
Temperature - 38° F
RH - 85%

GROUND DEPOSITION ON CARDLINE

TRIAL 33



Thuricide 32LV
Air Tractor AT-301
Micronair AU4000
Wind Speed - 6 MPH
Wind Direction - 320°
Temperature - 44° F
RH 82%

ACKNOWLEDGEMENTS

These trials were made possible through the cooperation of Growers Air Service, Evergreen Helicopters, Eldorado National Forest, Nez Perce National Forest, Missoula Technology Development Center, and FPM staffs of the Pacific Southwest Region and the Pacific Northwest Region.

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